Access DB# 163171

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: JACKIE HOWARD Examiner #: 60299 Date: 09/05/03
Art Unit: 1764 Phone Number 30 8-2514 Serial Number: 10/067978
Mail Box and Bldg/Room Location: CP3-10 B36 Results Format Preferred (circle): (PAPER) DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

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Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Lubricant Compositions Containing Phosphorus, Molybdenum and Hydroxy-substituted dithiocarbamate

Inventors (please provide full names): Vincent J. Gatto

Earliest Priority Filing Date: 08 Feb 2002

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

(1) A lubricant composition comprising a molybdenum source, a hydroxy-substituted dithiocarbamate and optionally, a phosphorus source..

(2) The compound of claims 38-49 (copy enclosed)

(3) The product of claim 29 (copy enclosed)

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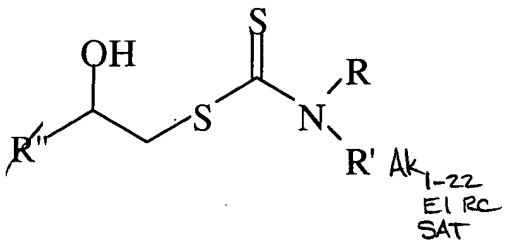
STAFF USE ONLY	Type of Search	Vendors and cost where applicable
Searcher: EL	NA Sequence (#)	STN $391.02
Searcher Phone #:	AA Sequence (#)	Dialog
Searcher Location:	Structure (#) ✓ (3)	Questel/Orbit
Date Searcher Picked Up:	Bibliographic ✓ (and 2)	Dr.Link
Date Completed: 9-9-03	Litigation	Lexis/Nexis
Searcher Prep & Review Time: 10	Fulltext	Sequence Systems
~~Clerical Prep Time:~~	Patent Family	WWW/Internet
Online Time: 105	Other	Other (specify)

PTO-1590 (8-01)

WHAT IS CLAIMED IS:

1. A lubricant composition comprising a molybdenum source, a hydroxy-substituted dithiocarbamate, and optionally, a phosphorous source.

2. The composition of claim 1, wherein the hydroxy-substituted dithiocarbamate has the formula:



wherein R and R' may be independently hydrogen or alkyl with the requirement that at least one of R or R' is C_1 to C_{22} alkyl, R" is hydrogen, C_1 to C_{22} alkyl, R"'XCH_2, R"'$O(C=O)CH_2XCH_2$, or R"'$O(C=O)CH_2CH_2XCH_2$ where R"' is C_1 to C_{22} alkyl, and X is oxygen (O) or sulfur (S).

3. The composition of claim 2, wherein R and R' are alkyl.

4. The composition of claim 2, wherein R" is hydrogen.

viscosity, and a minor amount of a composition of claim 1.

27. The lubricating oil of claim 26, wherein the composition of claim 1 is present in an amount of from about 0.25 to about 2.5 percent by weight of the lubricating oil.

28. The composition of claim 1, wherein the hydroxy-substituted dithiocarbamate is present in an amount of from about 0.05 to about 1.5 weight percent, and the molybdenum source is present in an amount to deliver from about 25 to about 1500 ppm molybdenum.

29. A reaction product produced by combining in substantially equimolar proportions an epoxide, a primary or secondary amine, and carbon disulfide, said process being carried out in the absense of a reaction solvent.

30. The reaction product of claim 29, wherein the reactants are combined in substantially equimolar proportions, and combining being carried out in the absence of a reaction solvent.

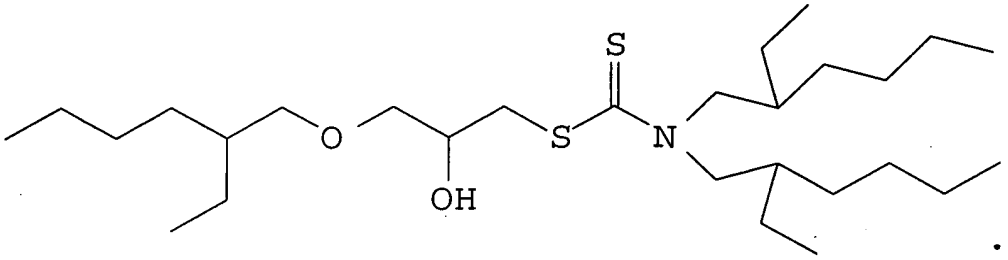
31. The reaction product of claim 29, wherein the epoxide is selected from the group consisting of ethylene oxide, propylene oxide, 1,2-butylene oxide, 1,2-epoxypentane, 1,2-epoxyhexane, 1,2-epoxyheptane, 1,2-epoxyoctane, 1,2-epoxynonane, 1,2-epoxydecane, 1,2-epoxyundecane, 1,2-epoxydodecane, 1,2-epoxytridecane, 1,2-epoxytetradecane, 1,2-epoxypentadecane, 1,2-epoxyhexadecane, 1,2-epoxyheptadecane, 1,2-epoxyoctadecane, methyl

oxide polymers, esters of dicarboxylic acids, esters of polyols, esters of phosphorus-containing acids, polymeric tetrahydrofurans, silicon-based oils, and mixtures thereof.

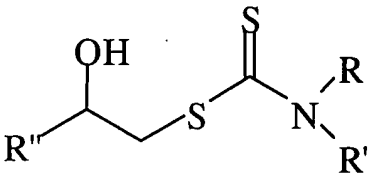
38. The compound 3-(2-ethylhexyloxy)-2-hydroxypropyl bis(2-ethylhexyl) carbamodithioate.

39. The compound 3-(2-ethylhexyloxy)-2-hydroxypropyl dibutylcarbamodithioate.

40. A compound with the following chemical formula:



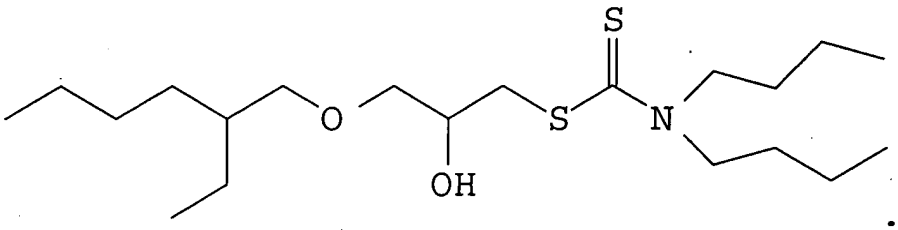
41. A lubricating composition comprising a compound with the following chemical formula:



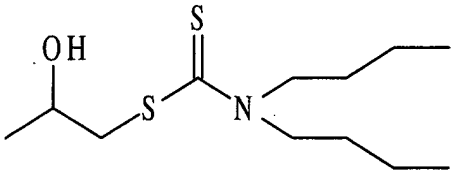
wherein R, R' and R" are alkyl groups, and wherein the sum of the number of carbon atoms

of R and R' is 8 or more, and R" is hydrogen or alkyl.

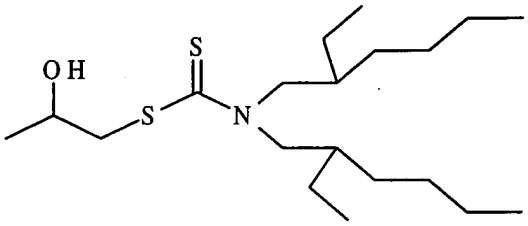
42. A lubricating composition comprising a compound with the following chemical formula:



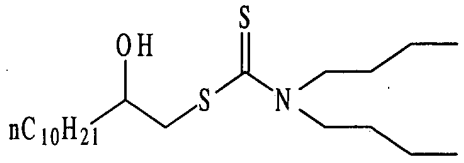
43. A lubricating composition comprising a compound with the following chemical formula:



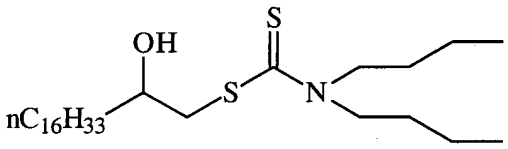
44. A lubricating composition comprising a compound with the following chemical formula:



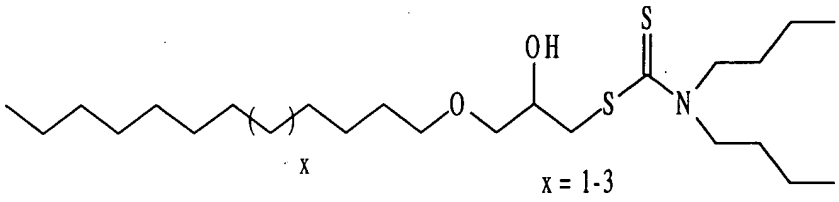
45. A lubricating composition comprising a compound with the following chemical formula:



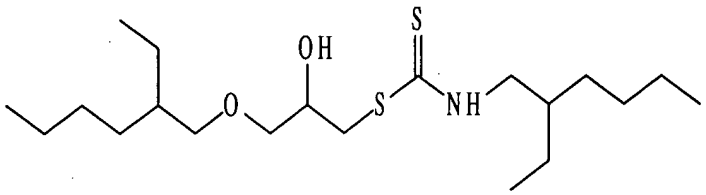
46. A lubricating composition comprising a compound with the following chemical formula:



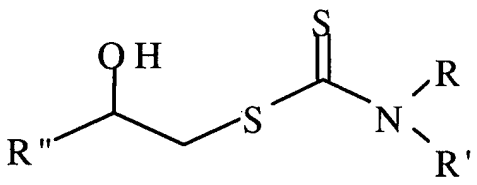
47. A lubricating composition comprising a compound with the following chemical formula:



48. A lubricating composition comprising a compound with the following chemical formula:



49. A lubricating composition comprising a compound with the following chemical formula:



wherein R, R' and R" are alkyl groups, and wherein the sum of the number of carbon atoms of R and R' is 8 or more, and R" is R"'XCH_2, where R"' is alkyl and X is oxygen.

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=> display history full l1-

     FILE 'REGISTRY' ENTERED AT 19:41:59 ON 09 SEP 2003
L1       251462 SEA OC2/ESS OR OC2/ES
L2       102276 SEA L1 AND (C(L)H(L)O)/ELS AND 3/ELC.SUB
L3        77243 SEA L2 NOT PMS/CI
                E CARBON DISULFIDE/CN
L4            1 SEA "CARBON DISULFIDE"/CN

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L5       125511 SEA L3
L6       256775 SEA EPOXID? OR POLYEPOX? OR EPOXY OR EPOXIES
L7              QUE ?AMINO? OR ?AMINE?
L8        46473 SEA L4 OR CARBON#(A)(DISULFIDE# OR DISULPHIDE#) OR CS2
L9          261 SEA L5 AND L7 AND L8
L10         166 SEA L6 AND L7 AND L8
L11        5798 SEA L4 (L) RCT/RL
L12          78 SEA L9 AND L11
L13          39 SEA L10 AND L11
L14       38550 SEA (PRIMARY OR SEC OR SECONDARY)(3A)(AMINE# OR DIAMINE#
                OR TRIAMINE#)
L15           3 SEA (L12 OR L13) AND L14
L16          11 SEA (L9 OR L10) AND L14
L17      295246 SEA (LUBRIC? OR LUBE# OR GREAS? OR ANTIFRIC? OR ANTIWEAR?
                 OR ANTICORRO? OR ANTIRUST? OR ANTIOXID? OR ANTI(W)(FRIC?
                 OR WEAR? OR CORRO? OR RUST? OR OXID?) OR SLICK? OR
                SLIPP? OR OLEAGINOUS?)/BI,AB
L18       23007 SEA ((GEAR? OR ENGINE# OR CRANKCASE? OR MOTOR# OR
                TRANSMISSION? OR HYDRAUL? OR MACHINE? OR (2 OR 4 OR TWO
                OR FOUR)(W)(CYCLE# OR STROKE#))(2A)(FLUID# OR OIL#))/BI,A
                B
L19          41 SEA (L9 OR L10) AND (L17 OR L18)
L20          15 SEA (L12 OR L13) AND (L17 OR L18)

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L22       13531 SEA (C(L)H(L)N)/ELS AND 3/ELC.SUB AND 1/N AND NO RSD/FA
L23       10350 SEA L22 NOT (?CYANO? OR ?NITRIL?)/CNS

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L26         131 SEA L24 AND L25 AND L8
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L28          22 SEA L26 AND L11
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L29         16624 SEA L21 (L) RCT/RL
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L32            25 SEA L26 AND L30
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L35             9 SEA L15 OR L34
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                   SAV L41 HOW978/A
L42            99 SEA L41 AND NO RSD/FA
L43           222 SEA L41 AND 5/ELC.SUB
L44            73 SEA L43 AND 1/N AND 2/S AND 1-2/O
L45            34 SEA L44 AND L42

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L47           113 SEA L41
L48             9 SEA L47 AND (L17 OR L18)

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     FILE 'HCA' ENTERED AT 20:21:23 ON 09 SEP 2003
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L51             2 SEA L47 AND L50
L52            31 SEA L47 AND (P OR ?PHOSPH?)
L53             4 SEA L52 AND (L17 OR L18)
L54            11 SEA L48 OR L51 OR L51
L55            32 SEA L46 NOT L54


     FILE LREGISTRY


=> d l41 que stat
L39                STR
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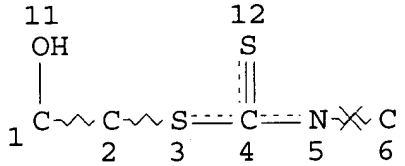

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CONNECT IS E2 RC AT 3
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DEFAULT ECLEVEL IS LIMITED

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STEREO ATTRIBUTES: NONE
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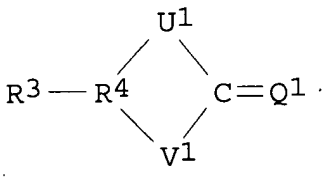
=> d l35 1-9 cbib abs hitstr hitind

L35 ANSWER 1 OF 9 HCA COPYRIGHT 2003 ACS on STN
138:222335 One-component moisture-curable **epoxy** resin compositions with good curability at low temperature, and their cured products. Saito, Hideaki; Motofuji, Fumiaki (Sanyo Chemical Industries, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003073455 A2 20030312, 13 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-263289 20010831.
GI



I

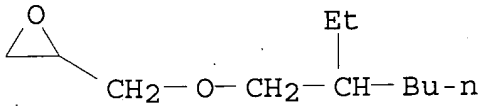
AB The compns. comprise (A) **epoxy** resins, (B) latent curing agents Z(N:CR1R2)2 (Z = residue of C3-60-alicyclic **amines** having 2-6 **primary amino** groups; R1, R2 = H,

C1-6-alkyl, C1-6-alkenyl, C6-10-aryl, C7-20-aralkyl, C7-20-alkylaryl; R1 = R2 .noteq. H), and (C) heterocyclic compds. I (Q1, U1, V1 = O, S; R3 = residue of cyclic ethers; R4 = C2-10-hydrocarbon group). Thus, a storage-stable compn. comprising **norbornanediamine** Me iso-Pr ketone diketimine, the heterocyclic compd. (manufd. from **CS2** and 2-ethylhexyl glycidyl ether), resorcin diglycidyl ether (Denacol EX 201), and bisphenol F **epoxy** resin (Epikote 807) was applied on a substrate and cured at 0.degree. to give a test coating showing curing time 24 h, pencil hardness H, and no whitening.

IT **75-15-0**, **Carbon disulfide**, reactions
2461-15-6, 2-Ethylhexyl glycidyl ether
(heterocyclic crosslinkers for one-component moisture-curable **epoxy** compns. with good cold curability)

RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)

RN 2461-15-6 HCA
CN Oxirane, [[(2-ethylhexyl)oxy]methyl]- (9CI) (CA INDEX NAME)



IC ICM C08G059-50
ICS C08K005-103; C08K005-20; C08K005-46; C08L063-00; C08L071-02; C08L083-12

CC 37-6 (Plastics Manufacture and Processing)

ST moisture curable **epoxy** ketimine latent crosslinker; heterocyclic sulfur hardener moisture curable **epoxy**; storage stability oxathietanethione **epoxy** one component

IT Crosslinking agents
(heterocyclic compds.; heterocyclic crosslinkers for one-component moisture-curable **epoxy** compns. with good cold curability)

IT **Epoxy** resins, preparation
(heterocyclic crosslinkers for one-component moisture-curable **epoxy** compns. with good cold curability)

IT Crosslinking agents
(latent, diketimine; heterocyclic crosslinkers for one-component moisture-curable **epoxy** compns. with good cold curability)

IT Coating materials
(moisture-curable; heterocyclic crosslinkers for one-component moisture-curable **epoxy** compns. with good cold curability)

IT Surfactants

(nonionic, compns. contg.; heterocyclic crosslinkers for one-component moisture-curable **epoxy** compns. with good cold curability)

IT Coating materials
(storage-stable; heterocyclic crosslinkers for one-component moisture-curable **epoxy** compns. with good cold curability)

IT Heterocyclic compounds
(sulfur, crosslinking agent; heterocyclic crosslinkers for one-component moisture-curable **epoxy** compns. with good cold curability)

IT 29563-13-1, Denacol EX 201 58421-55-9, Epikote 807
(crosslinked with diketimines and heterocyclic compds.; heterocyclic crosslinkers for one-component moisture-curable **epoxy** compns. with good cold curability)

IT 500715-70-8P
(crosslinking agent; heterocyclic crosslinkers for one-component moisture-curable **epoxy** compns. with good cold curability)

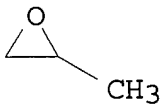
IT **75-15-0, Carbon disulfide**, reactions
563-80-4, Methyl isopropyl ketone **2461-15-6**, 2-Ethylhexyl glycidyl ether 232600-99-6, Bicyclo[2.2.1]**heptanediamine**
(heterocyclic crosslinkers for one-component moisture-curable **epoxy** compns. with good cold curability)

IT 9016-45-9, Nonipol 100
(nonionic surfactant, compns. contg.; heterocyclic crosslinkers for one-component moisture-curable **epoxy** compns. with good cold curability)

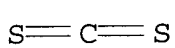
L35 ANSWER 2 OF 9 HCA COPYRIGHT 2003 ACS on STN
134:31109 Mineral gear oils and transmission fluids. Cain, Robert W. (Lubrizol Corporation, USA). PCT Int. Appl. WO 2000071646 A1 20001130, 78 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 2000-US14379 20000524. PRIORITY: US 1999-PV135484 19990524.

AB This invention relates to mineral oil based gear oils and transmission fluids which comprise a major amt. of a mineral oil having an iodine no. of <9 and where at least 55 % of the sats. are aliph., and gear oil or transmission fluid additives. In one embodiment, the invention relates to a gear oil or transmission fluid compn. comprising a major amt. of lubricant basestock and at least one functional additive wherein a major amt. of the lubricant basestock comprises a mineral oil having an iodine no. of <9 and comprising at least 45 % by wt. of aliph. sats. These gear oils and transmission fluids have good viscosity and oxidn. properties.

IT **75-56-9D**, Propylene oxide, reaction products with tert-dodecyl mercaptan
(mineral gear oils and transmission fluids)
RN 75-56-9 HCA
CN Oxirane, methyl- (9CI) (CA INDEX NAME)



IT **75-15-0**, **Carbon disulfide**, reactions
(mineral gear oils and transmission fluids)
RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)



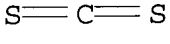
IC ICM C10M101-02
CC 51-8 (Fossil Fuels, Derivatives, and Related Products)
IT **Amines**, reactions
(**primary**; mineral gear oils and transmission fluids)
IT **Amines**, uses
(tallow alkyl, ethoxylated; mineral gear oils and transmission fluids)
IT 50-00-0D, Formaldehyde, reaction products with dimercaptothiadiazole and heptylphenol, uses **75-56-9D**, Propylene oxide, reaction products with tert-dodecyl mercaptan 98-11-3D, Benzenesulfonic acid, alkyl derivs., calcium or magnesium salts, overbased, borated, uses 101-02-0, Triphenyl phosphite 108-30-5D, Succinic anhydride, butenyl derivs. 122-39-4D, **Diphenylamine**, reaction products with nonenes, alkylated 301-02-0, Oleylamide 1072-71-5, Dimercaptothiadiazole 1809-19-4, Dibutyl hydrogen phosphite 7664-38-2, Phosphoric acid, uses 18760-44-6 25103-58-6D, tert-Dodecyl mercaptan, reaction products with propylene oxide 25496-72-4, Glycerol monooleate 26997-02-4D, Heptylphenol, reaction products with dimercaptothiadiazole and formaldehyde 27215-95-8D, Nonene, reaction products with **diphenylamine**, alkylated 36878-20-3, **Dinonyldiphenylamine** 311773-46-3, Alkylate A 230 311783-74-1, Chevron UCBO 311786-41-1, LZ 7720C 311786-42-2, Garbacryl 6335 311786-59-1, Motiva Tex HVI 311786-91-1, Acryloid 3008
(mineral gear oils and transmission fluids)
IT **75-15-0**, **Carbon disulfide**, reactions 115-11-7, Isobutene, reactions 1314-56-3, Phosphorus pentoxide, reactions 7704-34-9, Sulfur, reactions 7783-06-4, Hydrogen sulfide, reactions 10043-35-3, Boric acid, reactions 25088-57-7, Dioleyl phosphite 311342-84-4
(mineral gear oils and transmission fluids)

L35 ANSWER 3 OF 9 HCA COPYRIGHT 2003 ACS on STN
133:351613 **Epoxy** caulks for repairing cracked and damaged concrete and method of injection. Ando, Takeshi; Adachi, Taki (Sanyo Chemical Industries, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000313874 A2 20001114, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-121018 19990428.

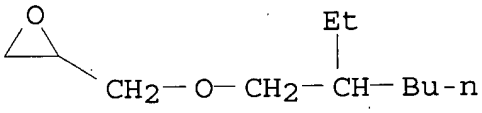
AB The caulks with good workability at low temp. are obtained from a compn. contg. **polyepoxy** compds., a heterocyclic thioketone compd. as crosslinking accelerator and **primary** or/and **secondary amine** as curing agent. Thus, mixing **CS2** 90 with LiBr 5 in THF 120 and 2-ethylhexyl glycidyl ether 58 parts gave a heterocyclic thioketone, 5 parts of which was combined with 35 parts m-**xylylenediamine** and 190 parts Epikote 828 to give a caulking compn. with time for drying to the touch 120 min, viscosity 8500 mPa.cntdot.s and adhesion strength 25 kg/cm2.

IT **75-15-0**, **Carbon disulfide**, reactions
2461-15-6, 2-Ethylhexyl glycidyl ether **3454-29-3**, Trimethylolpropane triglycidyl ether
(reactant; **epoxy** caulks for repairing cracked and damaged concrete and method of injection)

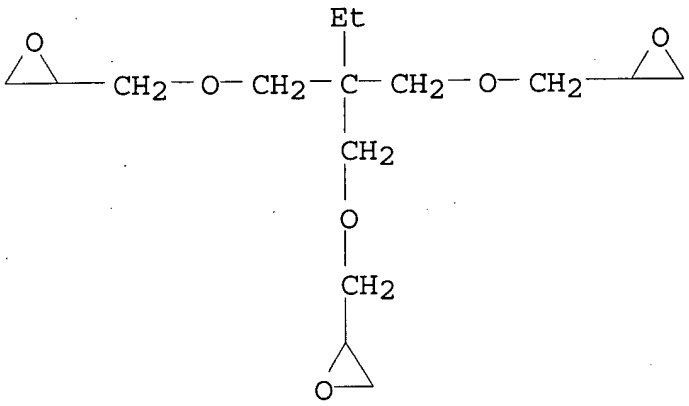
RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)



RN 2461-15-6 HCA
CN Oxirane, [[(2-ethylhexyl)oxy]methyl]- (9CI) (CA INDEX NAME)



RN 3454-29-3 HCA
CN Oxirane, 2,2'-[[2-ethyl-2-[(oxiranylmethoxy)methyl]-1,3-propanediyl]bis(oxymethylene)]bis- (9CI) (CA INDEX NAME)



IC ICM C09K003-10
ICS C09K003-10; C08G059-50; C09K017-18; E04G023-02; C09K103-00
CC 42-11 (Coatings, Inks, and Related Products)
ST concrete caulking **epoxy** resin crosslinking accelerator; heterocyclic thioketone crosslinking accelerator **epoxy** caulking compn
IT Crosslinking catalysts
(accelerator; **epoxy** caulks for repairing cracked and damaged concrete and method of injection)
IT Heterocyclic compounds
(curing accelerator; **epoxy** caulks for repairing cracked and damaged concrete and method of injection)
IT Caulking compositions
Concrete
(**epoxy** caulks for repairing cracked and damaged concrete and method of injection)
IT **Epoxy** resins, uses
(**epoxy** caulks for repairing cracked and damaged concrete and method of injection)
IT Ketones, uses
Ketones, uses
Thiocarbonyl compounds
Thiocarbonyl compounds
(thiones, curing accelerator; **epoxy** caulks for repairing cracked and damaged concrete and method of injection)
IT 203722-96-7, 1,3-Oxathiolane-2-thione, 5-[[(2-ethylhexyl)oxy]methyl]-
(curing accelerator; **epoxy** caulks for repairing cracked and damaged concrete and method of injection)
IT 21033-22-7P, 5,5-Dimethyl-1,3-oxathiolane-2-thione 306769-82-4P
(curing accelerator; **epoxy** caulks for repairing cracked and damaged concrete and method of injection)
IT 113930-69-1P, Bisphenol A-epichlorohydrin-m-**xylylenediamine** copolymer
(**epoxy** caulks for repairing cracked and damaged concrete and method of injection)
IT **75-15-0**, **Carbon disulfide**, reactions

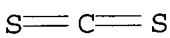
503-30-0, Trimethylene oxide **2461-15-6**, 2-Ethylhexyl glycidyl ether **3454-29-3**, Trimethylolpropane triglycidyl ether
(reactant; **epoxy** caulks for repairing cracked and damaged concrete and method of injection)

L35 ANSWER 4 OF 9 HCA COPYRIGHT 2003 ACS on STN
129:318559 The mixed polysulfides and the **lubricants** and the **hydraulic fluids** containing them. Manka, John S.; Abraham, William D.; Roby, Stephen H.; Supp, James A.; Yodice, Richard (Lubrizol Corp., USA). Jpn. Kokai Tokkyo Koho JP 10265792 A2 19981006 Heisei, 41 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-74697 19980323. PRIORITY: US 1997-823467 19970324.

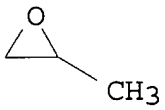
AB **Lubricants** and **hydraulic fluids** with improved **antiwear** properties contain .gtoreq.1 of polysulfides selected from the compds. having the general formulas (1) T1T2P(X1)(S)nSC(X2)L1, (2) T3T4P(X3)(S)nS(DMTD)SJ, (3) L2C(X4)(S)nS(DMTD)SG, and (4) .gtoreq.2 of mixts. of compds. of (1), (2) and (3), where DMTD = thiadiazole nucleus; J = H, SR, SP(X5)T5T6 or SC(X6)L3; G = H, SR or SC(X7)L4; T1-6 = R, SR or OR, independently; L1-4 = R, SR, OR or NRR, independently; X1-7 = O or S independently; each R = hydrocarbyl group; and n = 1-4.

IT **75-15-0**, **Carbon disulfide**, reactions
75-56-9, Propylene oxide, reactions **111-92-2**, Di-n-butylamine
(in prepn. of mixed polysulfides and **lubricants** and **hydraulic fluids** contg. them)

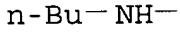
RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)



RN 75-56-9 HCA
CN Oxirane, methyl- (9CI) (CA INDEX NAME)



RN 111-92-2 HCA
CN 1-Butanamine, N-butyl- (9CI) (CA INDEX NAME)



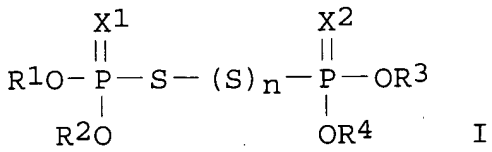
IC ICM C10M137-10
ICS C07D285-06; C07D285-08; C07D285-10; C07D285-125; C10M135-36; C10N030-06; C10N040-08; C10N040-25

CC 51-8 (Fossil Fuels, Derivatives, and Related Products)
ST polysulfide mixed **lubricant hydraulic fluid**
IT Amines, reactions
(aliph.; in prepn. of mixed polysulfides and **lubricants** and **hydraulic fluids** contg. them)
IT **Lubricating oils**
(**crankcase**; prepn. of mixed polysulfides and **lubricants** and **hydraulic fluids** contg. them)
IT **Lubricating oils**
(**gear oils**; prepn. of mixed polysulfides and **lubricants** and **hydraulic fluids** contg. them)
IT Polyamines
(polyethylene-, reaction products, bottoms; in prepn. of mixed polysulfides and **lubricants** and **hydraulic fluids** contg. them)
IT **Hydraulic fluids**
Lubricants
Lubricating greases
Lubricating oils
(prepn. of mixed polysulfides and **lubricants** and **hydraulic fluids** contg. them)
IT Disulfides
Polysulfides
(prepn. of mixed polysulfides and **lubricants** and **hydraulic fluids** contg. them)
IT 67-63-0, 2-Propanol, reactions **75-15-0**, **Carbon disulfide**, reactions **75-56-9**, Propylene oxide, reactions 96-33-3, Methyl acrylate 101-02-0, Triphenyl phosphite 108-11-2, 4-Methyl-2-pentanol 109-79-5, 1-Butanethiol 111-40-0, Diethylenetriamine **111-92-2**, Di-n-butylamine 112-55-0, Dodecylmercaptan 149-57-5, 2-Ethylhexanoic acid 1072-71-5, 2,5-Dimercapto-1,3,4-thiadiazole 1314-80-3, Phosphorus pentasulfide 2253-52-3, O,O'-Diisobutyl dithiophosphate 5810-88-8, Bis(2-ethylhexyl) dithiophosphate 6028-47-3 7664-41-7, Ammonia, reactions 7783-06-4, Hydrogen sulfide, reactions 54972-97-3
(in prepn. of mixed polysulfides and **lubricants** and **hydraulic fluids** contg. them)
IT 108-30-5DP, Succinic anhydride, polyisobutylene derivs., reaction products with polyethylene bottoms and diethylenetriamine 15834-33-0DP, Phosphorodithioic acid, mixed iso-Pr and 4-methyl-sec-amyl esters, reaction products with phosphorus pentasulfide and 2,5-dimercapto-1,3,4-thiadiazole, uses 32750-89-3P 203722-97-8P
(prepn. of mixed polysulfides and **lubricants** and **hydraulic fluids** contg. them)

L35 ANSWER 5 OF 9 HCA COPYRIGHT 2003 ACS on STN
128:232629 Oil composition for improving fuel economy in internal

combustion engines. Roby, Stephen H.; Supp, James A.; Manka, John S.; Abraham, William D. (Lubrizol Corp., USA). U.S. US 5726132 A 19980310, 26 pp. (English). CODEN: USXXAM. APPLICATION: US 1997-808698 19970228.

GI



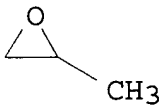
I

AB This invention relates to compns. for improving fuel efficiency in internal combustion engines. The compn. comprises a **lubricant** having an oil of **lubricating** viscosity and (A) a compd. I wherein in Formula (A-I), R1, R2, R3 and R4 are independently hydrocarbyl groups, X1 and X2 are independently O or S, and n is zero to 3; and (B) an acylated nitrogen-contg. compd. having a substituent of at least 10 aliph. carbon atoms. In one embodiment, the inventive compn. further comprises (C) a 2nd phosphorus compd. other than (A), said 2nd phosphorus compd. being a phosphorus acid, phosphorus acid ester, phosphorus acid salt, or deriv. thereof. In one embodiment, the inventive compn. further comprises (D) an alkali or alk. earth metal salt of an org. sulfur acid, carboxylic acid or phenol. In one embodiment, the inventive compn. further comprises (E) a thiocarbamate. These compns. are useful in providing **lubricating** compns. and functional fluids with enhanced fuel efficiency properties.

IT **75-15-0**, **Carbon disulfide**, reactions
75-56-9, reactions **111-92-2**, Di-n-butylamine
112-90-3, Oleylamine
(oil compn. for improving fuel economy in internal combustion engines based on phosphorus contg. sulfides, acylated nitrogen-contg. compds., phosphorus acids, alkali or alk. earth salts and sulfur contg. compds.)

RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)

RN 75-56-9 HCA
CN Oxirane, methyl- (9CI) (CA INDEX NAME)

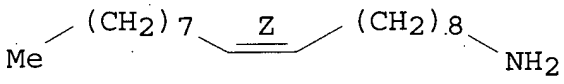


RN 111-92-2 HCA
CN 1-Butanamine, N-butyl- (9CI) (CA INDEX NAME)

n-Bu—NH—Bu-n

RN 112-90-3 HCA
CN 9-Octadecen-1-amine, (9Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



IC ICM C10M141-10
NCL 508287000
CC 51-8 (Fossil Fuels, Derivatives, and Related Products)
Section cross-reference(s): 38
IT **Lubricating** oils
(base oils; oil compn. for improving fuel economy in internal combustion engines based on phosphorus contg. sulfides, acylated nitrogen-contg. compds., phosphorus acids, alkali or alk. earth salts and sulfur contg. compds.)
IT **Lubricating oils**
(**crankcase**; **oil** compn. for improving fuel economy in internal combustion engines based on phosphorus contg. sulfides, acylated nitrogen-contg. compds., phosphorus acids, alkali or alk. earth salts and sulfur contg. compds.)
IT 67-63-0, Isopropyl alcohol, reactions **75-15-0**, **Carbon disulfide**, reactions **75-56-9**, reactions 96-33-3 101-02-0, Triphenyl phosphite 108-11-2, 4-Methyl-2-pentanol 111-88-6, 1-Octanethiol **111-92-2**, Di-n-butylamine 112-55-0, Dodecyl mercaptan **112-90-3**, Oleylamine 149-57-5, 2-Ethylhexanoic acid 1305-62-0, Calcium hydroxide, reactions 1309-37-1, Ferric oxide, reactions 1310-58-3, Potassium hydroxide, reactions 1310-73-2, Sodium hydroxide, reactions 1314-13-2, Zinc oxide (ZnO), reactions 1314-80-3, Phosphorus sulfide (P2S5) 2253-52-3 7664-41-7, Ammonia, reactions 7722-84-1, Hydrogen peroxide (H2O2), reactions 10545-99-0, Sulfur dichloride 25134-38-7, Diisopropyl dithiophosphoric acid 26952-21-6, Isooctanol 26999-29-1 27157-94-4 54972-97-3 204580-61-0
(oil compn. for improving fuel economy in internal combustion

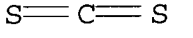
engines based on phosphorus contg. sulfides, acylated nitrogen-contg. compds., phosphorus acids, alkali or alk. earth salts and sulfur contg. compds.)

L35 ANSWER 6 OF 9 HCA COPYRIGHT 2003 ACS on STN
128:206655 Compositions containing thiocarbonates and acylated nitrogen-containing compounds. Supp, James A.; Manka, John S.; Abraham, William D.; Roby, Stephen H. (Lubrizol Corp., USA). Eur. Pat. Appl. EP 825247 A2 19980225, 39 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI. (English). CODEN: EPXXDW. APPLICATION: EP 1997-306374 19970821. PRIORITY: US 1996-701303 19960821.

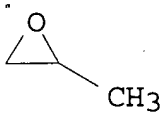
AB This invention relates to a compn., comprising: (A) a compd. represented by the formula of R1XC(:S)S(CR2R3)nT, in which R1, R2 and R3 are independently H or hydrocarbyl; X is O or S; n is zero, 1 or 2; and T is a hydrocarbyl, a hetero group, a hydroxyhydrocarbyl group, or an activating group; with the proviso that when n is zero, T can be a metal, and when n is 2, each R2 and R3 can be the same or different; and (B) an acylated nitrogen-contg. compd. having a substituent of at least .apprx.10 carbon atoms. The compn. may also contain (C) a phosphorus compd., (D) an org. sulfide, (E) a heterocyclic compd., and/or (F) a thiocarbamate. The components (A) and (B) are mixed with an oil of **lubricating** viscosity, and, optionally, one or more of (C), (D), (E) and/or (F) are added. The inventive compns. are useful in formulating **lubricating** compns. and functional fluids characterized by enhanced **antiwear** properties.

IT **75-15-0**, **Carbon disulfide**, reactions
75-56-9, Propylene oxide, reactions **111-92-2**, Di-n-butylamine **2855-19-8**, 1,2-Epoxydodecane
(**lubricating** oil compns. contg. thiocarbonates and acylated nitrogen-contg. compds.)

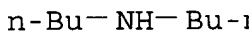
RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)



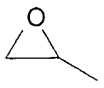
RN 75-56-9 HCA
CN Oxirane, methyl- (9CI) (CA INDEX NAME)



RN 111-92-2 HCA
CN 1-Butanamine, N-butyl- (9CI) (CA INDEX NAME)



RN 2855-19-8 HCA
CN Oxirane, decyl- (9CI) (CA INDEX NAME)



$(CH_2)_9$—Me

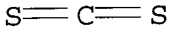
IC ICM C10M141-08
ICS C10M141-10
ICI C10M141-08, C10M133-52, C10M135-14, C10M135-18, C10M135-20, C10M135-36; C10M141-10, C10M133-52, C10M135-14, C10M135-18, C10M135-20, C10M135-36, C10M137-10; C10N030-06
CC 51-8 (Fossil Fuels, Derivatives, and Related Products)
ST **lubricating** oil thiocarbamate acylated nitrogen
IT **Lubricating** oil additives
(**lubricating** oil compns. contg. thiocarbonates and acylated nitrogen-contg. compds.)
IT 67-63-0, Isopropyl alcohol, reactions 71-36-3, 1-Butanol, reactions **75-15-0**, **Carbon disulfide**, reactions **75-56-9**, Propylene oxide, reactions 79-10-7, Acrylic acid, reactions 96-33-3, Methylacrylate 101-02-0, Triphenyl phosphite 108-11-2, 4-Methyl-2-pentanol 108-30-5D, Succinic anhydride, polyisobutylene derivs. 108-88-3, Toluene, reactions 109-99-9, Tetrahydrofuran, reactions 111-40-0, Diethylenetriamine **111-92-2**, Di-n-butylamine 115-77-5D, Pentaerythritol, Me derivs. 149-57-5, 2-Ethylhexanoic acid 818-61-1, 2-Hydroxyethylacrylate 1310-73-2, Sodium hydroxide, reactions 1314-13-2, Zinc oxide, reactions 1314-80-3, Phosphorus pentasulfide **2855-19-8**, 1,2-Epoxydodecane 2917-26-2, Hexadecyl mercaptan 7550-35-8, Lithium bromide 7647-01-0, Hydrochloric acid, reactions 7722-84-1, Hydrogen peroxide, reactions 7783-06-4, Hydrogen sulfide, reactions 9002-98-6 15834-33-0, Phosphorodithioic acid, reactions 25103-58-6, tert-Dodecyl mercaptan
(**lubricating** oil compns. contg. thiocarbonates and acylated nitrogen-contg. compds.)

L35 ANSWER 7 OF 9 HCA COPYRIGHT 2003 ACS on STN
128:194573 **Lubricants** and functional fluids containing heterocyclic compounds. Supp, James A.; Manka, John S.; Fahmy, Mohamed G. (Lubrizol Corp., USA). Eur. Pat. Appl. EP 825246 A2 19980225, 32 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI. (English). CODEN: EPXXDW. APPLICATION: EP 1997-306384 19970821. PRIORITY: US 1996-700975 19960821.
AB This invention relates to a **lubricating** compn. comprising a major amt. of an oil of **lubricating** viscosity and a minor amt. of (A) a 5-member heterocyclic compd. represented by the formula wherein in Formula (A-I): X1, X2 and X3 are independently O

or S, and X2 and X3 can be NR1 wherein R1 is hydrogen or hydrocarbyl; and G1, G2, G3 and G4 are independently R2, OR2 or R3OR2, wherein R2 is hydrogen or hydrocarbyl and R3 is hydrocarbylene or hydrocarbylidene. In one embodiment, the inventive compn. further comprises (B) an acylated nitrogen-contg. compd. having a substituent of at least .apprx.10 aliph. carbon atoms. In one embodiment, the inventive compn. further comprises (C) a phosphorus compd. In one embodiment, the inventive compn. further comprises (D) a thiocarbamate. In one embodiment, the inventive compn. further comprises (E) a org. sulfide. In one embodiment, the invention relates to a process comprising mixing the foregoing component (A) with an oil of **lubricating** viscosity, and, optionally, one or more of the foregoing components (B), (C), (D) and/or (E).

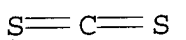
IT **75-15-0DP**, **Carbon disulfide**, reaction products with epoxidized soybean oil, uses
(prepn. of heterocyclic compds. as **lubricating** oil additives)

RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)

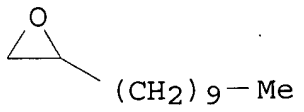


IT **75-15-0**, **Carbon disulfide**, reactions
2855-19-8, 1,2-Epoxydodecane **3234-28-4**, 1,2-Epoxytetradecane
(prepn. of heterocyclic compds. as **lubricating** oil additives)

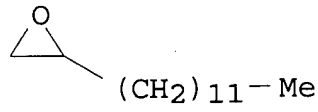
RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)



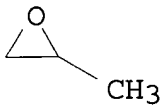
RN 2855-19-8 HCA
CN Oxirane, decyl- (9CI) (CA INDEX NAME)



RN 3234-28-4 HCA
CN Oxirane, dodecyl- (9CI) (CA INDEX NAME)



IT **75-56-9**, reactions
(prepn. of phosphorus-contg. compds. as additives for **lubricating** oil formulation contg. heterocyclic compds.)
RN 75-56-9 HCA
CN Oxirane, methyl- (9CI) (CA INDEX NAME)



IT **111-92-2**, Di-n-butylamine
(prepn. of thiocarbamates as additives for **lubricating** oil formulation contg. heterocyclic compds.)
RN 111-92-2 HCA
CN 1-Butanamine, N-butyl- (9CI) (CA INDEX NAME)

n-Bu—NH—Bu-n

IC ICM C10M135-36
ICS C10M141-08; C10M141-10
ICI C10M141-08, C10M133-52, C10M135-12, C10M135-14, C10M135-18, C10M135-36; C10M141-10, C10M133-52, C10M135-12, C10M135-14, C10M135-18, C10M135-36; C10N030-06
CC 51-8 (Fossil Fuels, Derivatives, and Related Products)
ST heterocyclic compd **lubricating** oil additive
IT **Lubricating** oil additives
(dispersants, ashless; prepn. of acylated nitrogen-contg. compds. with aliph. substituent of 10 or more C atoms as ashless dispersants in **lubricating** oil formulation contg. heterocyclic compds.)
IT Soybean oil
(epoxidized; prepn. of heterocyclic compds. as **lubricating** oil additives)
IT **Lubricating** oil additives
(**lubricants** and functional fluids contg. heterocyclic compds.)
IT Heterocyclic compounds
(**lubricants** and functional fluids contg. heterocyclic compds.)
IT Amines, reactions
(prepn. of phosphorus-contg. compds. as additives for **lubricating** oil formulation contg. heterocyclic compds.)
IT 9002-98-6
(bottoms; prepn. of acylated nitrogen-contg. compds. with aliph. substituent of 10 or more C atoms as ashless dispersants in **lubricating** oil formulation contg. heterocyclic compds.)
IT 108-30-5D, isobutylene derivs. 111-40-0, Diethylenetriamine 115-11-7D, succinic anhydride derivs. 115-77-5D, Me derivs.

(prepn. of acylated nitrogen-contg. compds. with aliph. substituent of 10 or more C atoms as ashless dispersants in **lubricating** oil formulation contg. heterocyclic compds.)

IT **75-15-0DP, Carbon disulfide**, reaction products with epoxidized soybean oil, uses 96738-46-4P, 5-Decyl-1,3-oxathiolane-2-thione 203722-96-7P 203722-98-9P
(prepn. of heterocyclic compds. as **lubricating** oil additives)

IT 109-99-9, uses
(prepn. of heterocyclic compds. as **lubricating** oil additives)

IT **75-15-0, Carbon disulfide**, reactions 2461-15-6, 2-Ethylhexyl glycidyl ether **2855-19-8**, 1,2-Epoxydodecane **3234-28-4**, 1,2-Epoxytetradecane 7550-35-8, Lithium bromide (LiBr)
(prepn. of heterocyclic compds. as **lubricating** oil additives)

IT 111-88-6, 1-Octanethiol 112-55-0, Dodecyl mercaptan 54972-97-3, Methylpentanol
(prepn. of org. sulfides as additives for **lubricating** oil formulation contg. heterocyclic compds.)

IT 1634-02-2P, Bis(dibutylthiocarbamoyl) disulfide
(prepn. of org. sulfides as additives for **lubricating** oil formulation contg. heterocyclic compds.)

IT 7783-06-4P, Hydrogen sulfide (H2S), preparation
(prepn. of phosphorus-contg. compds. as additives for **lubricating** oil formulation contg. heterocyclic compds.)

IT 67-63-0, 2-Propanol, reactions **75-56-9**, reactions 101-02-0, Triphenyl phosphite 104-76-7 108-11-2, 4-Methyl-2-pentanol 149-57-5, 2-Ethylhexanoic acid 565-67-3 1314-13-2, Zinc oxide (ZnO), reactions 1314-56-3, Phosphorus pentoxide, reactions 1314-80-3, Phosphorus pentasulfide 1336-21-6, Ammonium hydroxide ((NH4)(OH)) 2253-52-3 5810-88-8 7664-41-7, Ammonia, reactions 7722-84-1, Hydrogen peroxide (H2O2), reactions
(prepn. of phosphorus-contg. compds. as additives for **lubricating** oil formulation contg. heterocyclic compds.)

IT 15834-33-0DP, Phosphorodithioic acid, 2-ethylhexanol derivs., preparation 58369-51-0P
(prepn. of phosphorus-contg. compds. as additives for **lubricating** oil formulation contg. heterocyclic compds.)

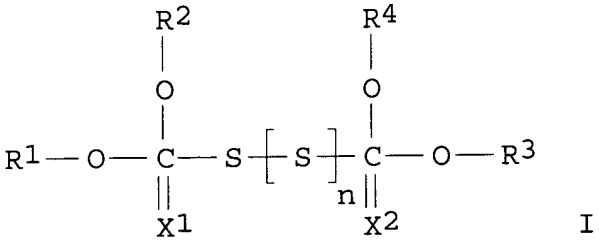
IT 203722-97-8P
(prepn. of phosphorus-contg. compds. as additives for **lubricating** oil formulation contg. heterocyclic compds.)

IT 96-33-3 **111-92-2**, Di-n-butylamine
(prepn. of thiocarbamates as additives for **lubricating** oil formulation contg. heterocyclic compds.)

L35 ANSWER 8 OF 9 HCA COPYRIGHT 2003 ACS on STN
128:169676 Additive compositions having reduced sulfur contents for **lubricants** and functional fluids. Abraham, William D.; Manka, John S.; Roby, Stephen H.; Supp, James A. (Lubrizol Corp.,

USA). U.S. US 5712230 A 19980127, 24 pp. (English). CODEN: USXXAM. APPLICATION: US 1997-812897 19970310.

GI

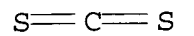


I

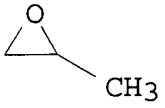
AB This invention relates to a compn., comprising: (AT) reaction products of compds. represented by the formula I and compds. selected to reduce the polysulfide components of I; and I wherein R1, R2, R3 and R4 are independently hydrocarbyl groups, X1 and X2 are independently O or S, and n is zero to 3; and wherein said reaction products have a lower copper reactivity than I; and (B) an acylated nitrogen-contg. compd. having a substituent of at least 10 aliph. carbon atoms. In one embodiment, the inventive compn. further comprises (C) a second phosphorus compd. other than I, said second phosphorus compd. being a phosphorus acid, phosphorus acid ester, phosphorus acid salt, or deriv. thereof. In one embodiment, the inventive compn. further comprises (D) an alkali or alk. earth metal salt of an org. sulfur acid, carboxylic acid or phenol. In one embodiment, the inventive compn. further comprises (E) a thiocarbamate In one embodiment the inventive compn. further comprises (F), a non-phosphorous organodisulfide. These compns. are useful in providing **lubricating** compns. and functional fluids with enhanced **antiwear** properties.

IT **75-15-0**, **Carbon disulfide**, reactions
75-56-9, Propylene oxide, reactions **111-92-2**, Di-n-butylamine **112-90-3**, Oleylamine
(additive compns. having reduced sulfur contents for **lubricants** and functional fluids)

RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)



RN 75-56-9 HCA
CN Oxirane, methyl- (9CI) (CA INDEX NAME)

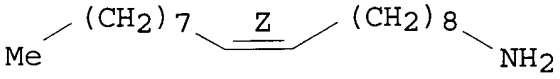


RN 111-92-2 HCA
CN 1-Butanamine, N-butyl- (9CI) (CA INDEX NAME)

n-Bu—NH—Bu-n

RN 112-90-3 HCA
CN 9-Octadecen-1-amine, (9Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



IC ICM C10M141-10
NCL 508232000
CC 51-8 (Fossil Fuels, Derivatives, and Related Products)
ST **lubricating** oil additive **antiwear**
IT Antifoaming agents
(additive compns. having reduced sulfur contents for **lubricants** and functional fluids)
IT Kerosene
Lime (chemical)
(additive compns. having reduced sulfur contents for **lubricants** and functional fluids)
IT **Lubricating** oil additives
(**antiwear**; additive compns. having reduced sulfur contents for **lubricants** and functional fluids)
IT 141977-72-2P
(additive compns. having reduced sulfur contents for **lubricants** and functional fluids)
IT 50-00-0, Formaldehyde, reactions 67-56-1, Methyl alcohol, reactions 67-63-0, Isopropyl alcohol, reactions 71-41-0, Amyl alcohol, reactions **75-15-0**, **Carbon disulfide**, reactions **75-56-9**, Propylene oxide, reactions 77-86-1, Trishydroxymethyl aminomethane 78-83-1, Isobutyl alcohol, reactions 96-33-3, Methyl acrylate 98-11-3D, Benzenesulfonic acid, monoalkyl derivs., reactions 108-11-2, 4-Methyl-2-pentanol 108-30-5D, Succinic anhydride, polyisobutenyl derivs. 108-95-2D, Phenol, C12 alkyl derivs., reactions 111-40-0, Diethylenetriamine 111-88-6, 1-Octanethiol **111-92-2**, Di-n-butylamine 112-55-0, Dodecyl mercaptan **112-90-3**, Oleylamine 137-32-6, 2-Methyl-1-butanol

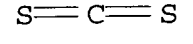
1305-62-0, Calcium hydroxide, reactions 1309-37-1, Ferric oxide, reactions 1310-58-3, Potassium hydroxide, reactions 1310-73-2, Sodium hydroxide, reactions 1314-13-2, Zinc oxide (ZnO), reactions 1314-80-3, Phosphorus pentasulfide 2253-52-3 5810-88-8 7722-84-1, Hydrogen peroxide, reactions 9002-98-6 10043-52-4, Calcium chloride (CaCl2), reactions 10545-99-0, Sulfur dichloride 25134-38-7, Diisopropyl dithiophosphoric acid 26952-21-6, Iso-octanol 26997-02-4, Heptylphenol 26999-29-1 27157-94-4 55502-62-0 58369-51-0 143637-18-7, Polyamine HPA-X
(additive compns. having reduced sulfur contents for **lubricants** and functional fluids)

L35 ANSWER 9 OF 9 HCA COPYRIGHT 2003 ACS on STN
125:301238 Production of organic silicon-phosphorus containing compositions for use as flame retardants, **hydraulic fluid**, building components, coating agents, adhesives, etc..
Blount, David H. (USA). U.S. US 5563285 A 19961008, 9 pp. (English). CODEN: USXXAM. APPLICATION: US 1993-160176 19931202.

AB A mixt. of Si and P is reacted with halides to produce Si tetrahalide, Si-P halides and P trihalide compn. This compn. is reacted with any suitable org. or inorg.-org. compd. which has an active H, halide and/or a metal radical to produce org. Si-P halides compns. which will react with inorg., inorg.-org. and org. compd. to produce an org. Si-P product. For example, equal parts by wt. of powd. Si and P are mixed, then the mixt. is heated until the P is melted, then heated to just below the P b.p., in a closed vessel; then dry Cl2 is passed over the hot Si and P mixt. until a mixt. of SiCl4, PCl3 and Si-P chlorides is produced; 50 parts by wt. of MeOH is reacted with 20 parts of the previously-prepd. mixt. to give unknown products. Other examples comprise substituting many org. compds. for MeOH, e.g. alcs., epoxides, unsatd. compds., polycarboxylic acid anhydrides. These products may be used (no data given on effectiveness) as flame-retardants, **hydraulic fluid**, building components, coating agents, adhesives and many other uses. The claims comprise mixing and reacting SiCl4, PCl3, and a Grignard reagent such that halogen atoms are left on the Si and/or P radicals.

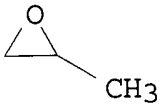
IT **75-15-0, Carbon disulfide**
75-21-8, Oxirane **75-56-9 106-88-7**
107-10-8, 1-Propanamine **121-44-8 2404-44-6**
4436-24-2 35898-62-5
(prodn. of org. silicon-phosphorus contg. compns. flame retardants and **hydraulic fluid** and building components and coating agents and adhesives)

RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)

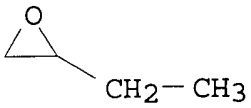


RN 75-21-8 HCA
CN Oxirane (9CI) (CA INDEX NAME)

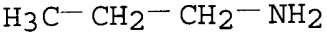
RN 75-56-9 HCA
CN Oxirane, methyl- (9CI) (CA INDEX NAME)



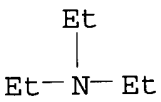
RN 106-88-7 HCA
CN Oxirane, ethyl- (9CI) (CA INDEX NAME)



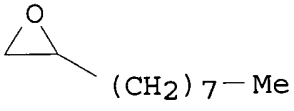
RN 107-10-8 HCA
CN 1-Propanamine (9CI) (CA INDEX NAME)



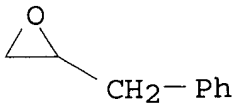
RN 121-44-8 HCA
CN Ethanamine, N,N-diethyl- (9CI) (CA INDEX NAME)



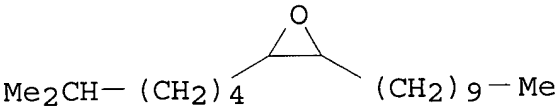
RN 2404-44-6 HCA
CN Oxirane, octyl- (9CI) (CA INDEX NAME)



RN 4436-24-2 HCA
CN Oxirane, (phenylmethyl)- (9CI) (CA INDEX NAME)



RN 35898-62-5 HCA
CN Oxirane, 2-decyl-3-(5-methylhexyl)- (9CI) (CA INDEX NAME)



IC ICM C07F007-08
NCL 556404000
CC 29-7 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 37, 42, 78
ST phosphorus silicon org compn prepn; flame retardant phosphorus silicon org compn; **hydraulic fluid** phosphorus silicon org compn; building component phosphorus silicon org compn; coating agent phosphorus silicon org compn; adhesive phosphorus silicon org compn; carboxylic acid
IT Adhesives
Coating materials
Construction materials
Fireproofing agents
Hydraulic fluids
(prodn. of org. silicon-phosphorus contg. compns. as potential)
IT Creosote
(prodn. of org. silicon-phosphorus contg. compns. flame retardants and **hydraulic fluid** and building components and coating agents adhesives)
IT Castor oil
Epoxy resins
Linseed oil
(prodn. of org. silicon-phosphorus contg. compns. flame retardants and **hydraulic fluid** and building components and coating agents and adhesives)
IT Polyesters
(unsatd., prodn. of org. silicon-phosphorus contg. compns. flame retardants and **hydraulic fluid** and building components and coating agents and adhesives)
IT 9005-32-7, Alginic acid
(prodn. of org. silicon-phosphorus contg. compns. flame retardants and **hydraulic fluid** and building components and coating agent and adhesives)
IT 67-56-1, Methanol 67-63-0, 2-Propanol 67-64-1, 2-Propanone 71-23-8, 1-Propanol 71-36-3, 1-Butanol 74-86-2, Ethyne 74-87-3 74-93-1, Methanethiol 75-07-0, Acetaldehyde 75-12-7, Formamide

75-15-0, **Carbon disulfide**
75-21-8, Oxirane **75-56-9** 75-87-6 78-51-3
78-79-5 78-83-1 78-90-0, 1,2-Propanediamine 79-09-4, Propanoic acid 79-10-7, 2-Propenoic acid 79-41-4 85-44-9, 1,3-Isobenzofurandione 88-12-0 88-99-3, 1,2-Benzenedicarboxylic acid 96-24-2 98-00-0, 2-Furanmethanol 98-01-1, 2-Furancarboxaldehyde 100-52-7, Benzaldehyde 105-60-2 **106-88-7** 106-89-8 106-92-3 106-99-0, 1,3-Butadiene 107-02-8, 2-Propenal **107-10-8**, 1-Propanamine 107-13-1, 2-Propenenitrile 107-18-6, 2-Propen-1-ol 107-19-7, 2-Propyn-1-ol 107-21-1, 1,2-Ethanediol 108-05-4, Acetic acid ethenyl ester 108-30-5 108-31-6, 2,5-Furandione 108-78-1, 1,3,5-Triazine-2,4,6-triamine 108-95-2, Phenol 109-53-5 110-15-6, Butanedioic acid 110-16-7, 2-Butenedioic acid (2Z)- 110-17-8, 2-Butenedioic acid (2E)- 110-63-4, 1,4-Butanediol 111-20-6, Decanedioic acid 111-40-0 111-46-6 **121-44-8** 122-60-1 123-72-8, Butanal 123-99-9, Nonanedioic acid 124-04-9, Hexanedioic acid 124-09-4, 1,6-Hexanediamine 126-99-8 461-58-5 503-09-3 593-74-8 676-58-4 868-85-9 930-27-8 1321-11-5 1344-08-7, Sodium sulfide (Na2(Sx)) 1762-95-4 2224-15-9 **2404-44-6** 3068-00-6, 1,2,4-Butanetriol 3132-64-7 3586-58-1 4170-30-3, 2-Butenal **4436-24-2** 5329-14-6, Sulfamic acid 7439-95-4, Magnesium 7440-21-3, Silicon 7440-66-6, Zinc 7664-38-2, Phosphoric acid 7719-12-2, Phosphorous trichloride 7723-14-0, Phosphorus 7782-50-5, Chlorine 9002-89-5 9004-34-6, Cellulose 10025-87-3, Phosphoric trichloride 10026-04-7 10043-22-8 15347-57-6 25068-38-6 25322-69-4 26471-62-5 26545-55-1, Propanediamine 26764-44-3 30525-89-4, Paraformaldehyde 30899-19-5, Pentanol **35898-62-5** 91717-85-0, 1,2,10-Decanetriol
(prodn. of org. silicon-phosphorus contg. compns. flame retardants and **hydraulic fluid** and building components and coating agents and adhesives)

IT 50-00-0, Formaldehyde 50-81-7, L-Ascorbic acid 56-40-6, Glycine 56-81-5, 1,2,3-Propanetriol 57-13-6, Urea 57-55-6, 1,2-Propanediol 60-33-3, 9,12-Octadecadienoic acid (9Z,12Z)- 62-53-3, Benzenamine 62-56-6, Thiourea 64-17-5, Ethanol 64-19-7, Acetic acid 65-85-0, Benzoic acid
(prodn. of org. silicon-phosphorus contg. compns. for flame retardants and **hydraulic fluid** and building components and coating agents and adhesives)

=> d l36 1-8 cbib abs hitstr hitind

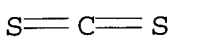
L36 ANSWER 1 OF 8 HCA COPYRIGHT 2003 ACS on STN
134:297283 Primers for road marking materials. Ando, Takeshi; Adachi, Ryu (Sanyo Chemical Industries, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001106966 A2 20010417, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-287760 19991008.

AB Primers contain heterocyclic compds. such as the reaction products of cyclic ethers with **CS2**, **polyepoxides** having

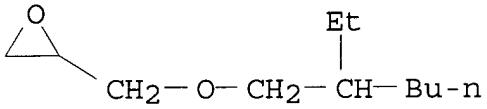
.gtoreq.2 **epoxy** groups/mol., and **amino** compds. having >2 active H's from **primary** and/or **secondary amines**. Thus, a self-extinguishing primer contained a reaction product of 2-ethylhexyl glycidyl ether with **CS2** 15, m-**xylylenediamine** 13, and Epikote 828 72 parts.

IT **75-15-0DP**, **Carbon disulfide**, reaction products with cyclic ethers, uses **2461-15-6DP**, 2-Ethylhexyl glycidyl ether, reaction products with **carbon disulfide** **3454-29-3DP**, Trimethylolpropane triglycidyl ether, reaction products with **carbon disulfide**
(self-extinguishing **epoxy** resin primers contg. heterocyclic compds. and **amines** for road marking materials)

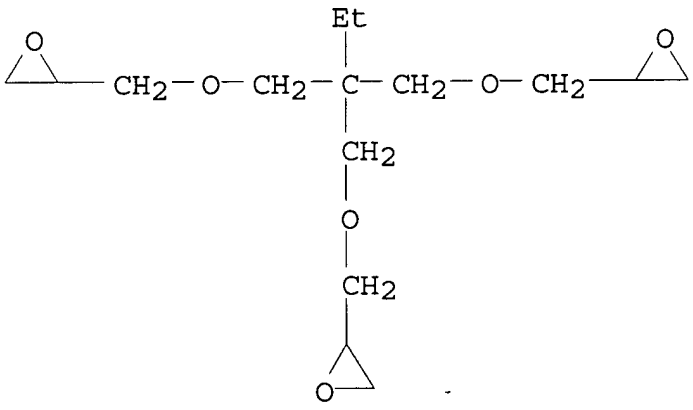
RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)



RN 2461-15-6 HCA
CN Oxirane, [[(2-ethylhexyl)oxy]methyl]- (9CI) (CA INDEX NAME)



RN 3454-29-3 HCA
CN Oxirane, 2,2'-[[2-ethyl-2-[(oxiranylmethoxy)methyl]-1,3-propanediyl]bis(oxymethylene)]bis- (9CI) (CA INDEX NAME)



IC ICM C09D163-00
ICS C09D005-00
CC 42-10 (Coatings, Inks, and Related Products)
ST **epoxy** primer traffic marking self extinguishing;

carbon disulfide epoxide reaction
product
IT Ethers, uses
(cyclic, reaction products with **carbon disulfide**; self-extinguishing **epoxy** resin primers contg. heterocyclic compds. and **amines** for road marking materials)
IT **Amines**, uses
(**polyamines**, aliph., nonpolymeric; self-extinguishing **epoxy** resin primers contg. heterocyclic compds. and **amines** for road marking materials)
IT **Amines**, uses
(**primary**; self-extinguishing **epoxy** resin primers contg. heterocyclic compds. and **amines** for road marking materials)
IT **Epoxides**
(reaction products with **carbon disulfide**; self-extinguishing **epoxy** resin primers contg. heterocyclic compds. and **amines** for road marking materials)
IT **Epoxy** resins, uses
(reaction products with **xylylenediamine**; self-extinguishing **epoxy** resin primers contg. heterocyclic compds. and **amines** for road marking materials)
IT **Amines**, uses
(**secondary**; self-extinguishing **epoxy** resin primers contg. heterocyclic compds. and **amines** for road marking materials)
IT Crosslinking agents
Fire-resistant materials
Marking
Primers (paints)
(self-extinguishing **epoxy** resin primers contg. heterocyclic compds. and **amines** for road marking materials)
IT Heterocyclic compounds
(self-extinguishing **epoxy** resin primers contg. heterocyclic compds. and **amines** for road marking materials)
IT Coating materials
(traffic-marking; self-extinguishing **epoxy** resin primers contg. heterocyclic compds. and **amines** for road marking materials)
IT **75-15-0DP**, **Carbon disulfide**, reaction products with cyclic ethers, uses 503-30-0DP, Trimethylene oxide, reaction products with **carbon disulfide** **2461-15-6DP**, 2-Ethylhexyl glycidyl ether, reaction products with **carbon disulfide** **3454-29-3DP**, Trimethylolpropane triglycidyl ether, reaction products with **carbon disulfide**
(self-extinguishing **epoxy** resin primers contg.

heterocyclic compds. and **amines** for road marking materials)

IT 124933-76-2P, Bisphenol A-epichlorohydrin-2-ethylhexyl glycidyl ether-m-**xylylenediamine** copolymer 334871-08-8P, Bisphenol A-epichlorohydrin-trimethylolpropane triglycidyl ether-m-**xylylenediamine** copolymer 334871-09-9P, Bisphenol A-epichlorohydrin-trimethylene oxide-m-**xylylenediamine** copolymer
(self-extinguishing **epoxy** resin primers contg. heterocyclic compds. and **amines** for road marking materials)

L36 ANSWER 2 OF 8 HCA COPYRIGHT 2003 ACS on STN
122:269891 Lubricating compositions, greases, and aqueous fluids containing the combination of a dithiocarbamate compound and an organic polysulfide.. Vinci, James N.; Butke, Betsy J.; Schwind, James J. (Lubrizol Corp., USA). Eur. Pat. Appl. EP 638631 A1 19950215, 20 pp. DESIGNATED STATES: R: BE, DE, ES, FR, GB, IT, SE. (English). CODEN: EPXXDW. APPLICATION: EP 1994-305742 19940803. PRIORITY: US 1993-101878 19930804.

AB A lubricating compn. (esp. oils or greases) contains: (1) at least one dithiocarbamate, (2) (optionally) at least one org. polysulfide, (3) a phosphorus- or boron-contg. antiwear or extreme-pressure additive, and (4) a base fluid selected from a base oil, water and a surfactant and thickener, or a base oil and a thickener. Component 1 is a reaction product of (1) a dithiocarbamic acid or salt (itself typically prepd. from a **secondary amine** and **CS2**), and (2) an unsatd. amide, acid, anhydride, ester, or ether, esp. an acrylic ester of formula R6R7C:C(R8)CO2R9 (each R6,R7, and R8 is independently H or hydrocarbyl, and R9 is H or C1-24-hydrocarbyl). Component 2 is derived from an oil, a fatty acid or ester, an olefin, or a polyolefin, esp. an olefin of formula R1R2C:CR3R4, in which each of R1,R2, R3, and R4 are independently H, hydrocarbyl, or an addnl. functionality (e.g., alkyl, carboxylate ester, amide, metal carboxylate, halogen, oxygen or divalent sulfur moiety, aryl or C.ltoreq.12-aryl, or ring up to C12). The combination also imparts improved oxidn. resistance and thermal stability.

IT **75-15-0D**, **Carbon disulfide**, reaction products with dialkyl **amines** and Me acrylate
(lubricant compns. contg. dithiocarbamates, org. polysulfide, and phosphorus- and boron-based compds.)

RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)

S=C=S

IC ICM C10M135-00
ICS C10M141-10; C10M141-12; C10M163-00
ICI C10M135-00, C10M135-02, C10M135-04, C10M135-18; C10M141-10, C10M135-02, C10M135-04, C10M135-18, C10M137-02, C10M137-04,

C10M137-10; C10M141-12, C10M135-02, C10M135-04, C10M135-18, C10M139-00
CC 51-8 (Fossil Fuels, Derivatives, and Related Products)
IT **Amines**, uses
Epoxides
Phospholipids, uses
(borated, lubricants contg.; lubricant compns. contg. dithiocarbamates, org. polysulfide, and phosphorus- and boron-based compds.)
IT **Polyamines**
(polyalkylene-, reaction products with polybutenylsuccinic anhydride; lubricant compns. contg. dithiocarbamates, org. polysulfide, and phosphorus- and boron-based compds.)
IT **75-15-0D**, **Carbon disulfide**, reaction products with dialkyl **amines** and Me acrylate 79-06-1D, 2-Propenamide, reaction products with **carbon disulfide** and diamyl **amine** 80-62-6 96-33-3D, reaction products with dithiocarbamates 97-63-2 97-88-1, Butyl methacrylate 100-37-8D, reaction products with polybutenylsuccinic anhydride 108-30-5D, Succinic anhydride, polybutenyl derivs., reaction products with polyalkylene **polyamines** 111-92-2D, Dibutyl **amine**, reaction products with **carbon disulfide** and Me acrylate 128-39-2, 2,6-Di-tert-butylphenol 140-88-5 141-32-2 142-09-6 594-07-0D, Dithiocarbamic acid, N,N-dialkyl derivs., reaction products with acrylate and methacrylate esters 1330-78-5, Tricresyl phosphate 2050-92-2D, Diamyl **amine**, reaction products with **carbon disulfide** and acrylamide 2499-95-8, Hexyl acrylate 2849-98-1, Pentyl methacrylate 2998-23-4, Pentyl acrylate 7664-38-2D, Phosphoric acid, esters, reaction products with **epoxides** 10043-35-3D, Boric acid, derivs. 13598-36-2D, Phosphonic acid, derivs., reaction products with phosphoric acid esters and **epoxides** 15834-33-0D, Dithiophosphoric acid, derivs., reaction products with **epoxides** 29385-43-1, Tolyltriazole
(lubricant compns. contg. dithiocarbamates, org. polysulfide, and phosphorus- and boron-based compds.)

L36 ANSWER 3 OF 8 HCA COPYRIGHT 2003 ACS on STN
113:211727 1-[[(Triphenylphosphoroylidene)**amino**]methyl]benzotriazole (BETMIP) a novel +CH2N: synthetic equivalent: its application to the synthesis of carbodiimides, imines, isothiocyanates, aziridines, and **secondary amines**
. Katritzky, Alan R.; Jiang, Jinlong; Urogdi, Laszlo (Dep. Chem., Univ. Florida, Gainesville, FL, 32611, USA). Synthesis (7), 565-7 (English) 1990. CODEN: SYNTBF. ISSN: 0039-7881. OTHER SOURCES: CASREACT 113:211727.
AB One carbon homoglogation was achieved in reations of the title compd. (I) as +CH2N: equiv. with isocyanates, aldehydes, **CS2**, 2-phenyloxirane, or alkyl iodides to give carbodiimides, Schiff bases, isothiocyanates, ethylphenylaziridine, or **secondary amines**, resp.

IT **96-09-3**
(reaction o, with [[(triphenylphosphorylidene)**amino**]methyl]benzotriazole in presence of Grignard reagent, ethylphenylaziridine from)
RN 96-09-3 HCA
CN Oxirane, phenyl- (9CI) (CA INDEX NAME)

Ph

CC 27-4 (Heterocyclic Compounds (One Hetero Atom))
Section cross-reference(s): 25
ST phosphazene equiv **phosphorylideneaminomethylbenzotriazole**; carbodiimide; Schiff base; imine; isothio cyanate; **amine secondary**; aziridine
IT Schiff bases
(prepn. of, in sequential reaction of [[(triphenylphosphorylidene)**amino**]methyl]benzotriazole with Grignard reagent and aldehydes)
IT Carbodiimides
(prepn. of, in sequential reaction of [[(tripohenylphosphorylidene)**amino**]methyl]benzotriazole with Grignard reagent and isocyanates)
IT Aldehydes, reactions
(reaction of, with [[(triphenylphosphorylidene)**amino**]methyl]benzotriazole in presence of Grignard reagent, Schiff bases from)
IT **Epoxides**
(reaction of, with [[(triphenylphosphorylidene)**amino**]methyl]benzotriazole in presence of Grignard reagent, aziridines from)
IT Cyanates
(reaction of, with [[(triphenylphosphorylidene)**amino**]methyl]benzotriazole in presence of Grignard reagent, carbodiimides from)
IT Alkyl iodides
(reaction of, with [[(triphenylphosphorylidene)**amino**]methyl]benzotriazole in presence of Grignard reagent, **secondary amines** from)
IT Phosphonitrile compounds
(phosphazenes, formation of, by reaction of [[(triphenylphosphorylidene)**amino**]methyl]benzotriazole with Grignard reagent and sequential reactions of)
IT **Amines**, preparation
(**secondary**, prepn. of, in sequential reaction of [[(triphenylphosphorylidene)**amino**]methyl]benzotriazole with Grignard reagent and alkyl iodides)
IT 116753-04-9P, Benzotriazole magnesium salt 126864-13-9P
126864-19-5P 130412-97-4P 130412-98-5P

(formation of, in reaction of [[(triphenylphosphorylidene) **amino**]methyl]benzotriazole in presence of Grignard reagent)

IT 124316-00-3P
(prepn. and conversion to phosphazene equiv. and sequential reactions of, with aldehydes, isocyanates, **carbon disulfide**, oxirane, or alkyl halides)

IT 3129-90-6DP, Isothiocyanic acid, esters
(prepn. of, in sequential reaction of [[(triphenylphosphorylidene)**amino**]methyl]benzotriazole with Grignard reagent and **carbon disulfide**)

IT **96-09-3**
(reaction o, with [[(triphenylphosphorylidene)**amino**]methyl]benzotriazole in presence of Grignard reagent, ethylphenylaziridine from)

IT 78-84-2 100-52-7, Benzaldehyde, reactions
(reaction of, with [[(triphenylphosphorylidene)**amino**]methyl]benzotriazole in presence of Grignard reagent, Schiff base from)

IT 86-84-0 103-71-9, reactions 1609-86-5, 1,1-Dimethylethyl isocyanate
(reaction of, with [[(triphenylphosphorylidene)**amino**]methyl]benzotriazole in presence of Grignard reagent, carbodiimide from)

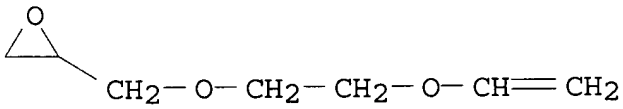
L36 ANSWER 4 OF 8 HCA COPYRIGHT 2003 ACS on STN
109:169842 Vinyl ethers containing an **epoxy** group. XV. Reactions with a **primary amine-carbon disulfide** system. Nedolya, N. A.; Komel'kova, V. I.; Trofimov, B. A. (Irkutsk. Inst. Org. Khim., Irkutsk, USSR). Zhurnal Organicheskoi Khimii, 24(2), 286-91 (Russian) 1988. CODEN: ZORKAE. ISSN: 0514-7492. OTHER SOURCES: CASREACT 109:169842.

AB Glycidol 2-(vinyloxy)ethyl ether (I) (1 or 2 mol, resp.) reacted neat with CH2:CHOCH2CH2NH2 and **CS2** to give nearly quant. CH2:CHOCH2CH2OCH2CH(OH)CH2S2CNRCH2CH2OCH:CH2 [R = H, CH2:CHOCH2CH2OCH2CH(OH)CH2]. I and **diamines** gave quant. [CH2:CHOCH2CH2OCH2CH(OH)CH2S2CNH]2Z [Z = (CH2)2, p-xylylene, m-phenylene].

IT **16801-19-7**
(reaction of, with **primary amines**)

RN 16801-19-7 HCA

CN Oxirane, [[2-(ethenyloxy)ethoxy]methyl]- (9CI) (CA INDEX NAME)

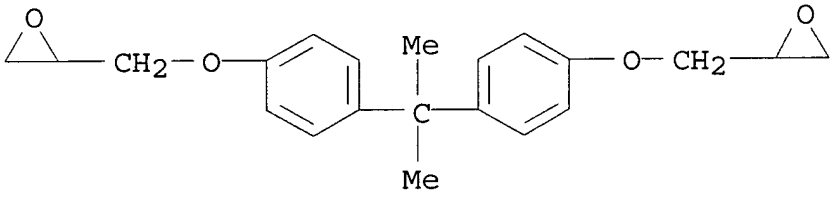


CC 23-20 (Aliphatic Compounds)

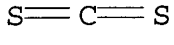
IT **Amines**, reactions
(reaction of, with **carbon disulfide** and

glycidol (vinyloxy)ethyl ether)
IT 7336-29-0, 2-(Vinyloxy)**ethylamine**
(reaction of, with **carbon disulfide** and **primary amines**)
IT **16801-19-7**
(reaction of, with **primary amines**)

L36 ANSWER 5 OF 8 HCA COPYRIGHT 2003 ACS on STN
88:90548 Poly(ether ureides). Schulze, Heinz (Texaco Development Corp., USA). Ger. Offen. DE 2726929 19780105, 30 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1977-2726929 19770615.
AB The title compds., useful as **epoxy** resin hardeners and starting materials for **aminoplasts**, are prepd. by treating **polyetherpolyamines** with ureide-forming compds. such as urea or isocyanates. Thus, 891 g **polyoxypropylenepolyamine** of mol. wt. 2000 and **primary amine** content 1.01 mequiv/g was treated with 109 g PhNCO in 45 min at 55.degree. and then stirred 2 h at 60.degree., giving a N-phenylureido-terminated polyether (I). A mixt. of bisphenol A diglycidyl ether [**1675-54-3**] 100, **polyoxypropylenepolyamine** hardener 30, piperazine-**alkanolamine** accelerator mixt. 10, and I 10 parts was used to adhere Al plates, giving a bond with tensile shear strength 238 kg/cm2, compared with 185 kg/cm2 for a control adhesive contg. no I.
IT **1675-54-3**
(hardeners for, polyoxypropyleneureide derivs. as)
RN 1675-54-3 HCA
CN Oxirane, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis- (9CI) (CA INDEX NAME)



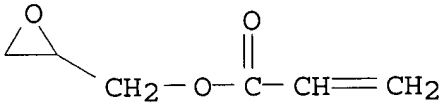
IT **75-15-0DP**, reaction products with **polyoxypropylenepolyamines**
(manuf. of, for **aminoplast** monomers and **epoxy** resin hardeners)
RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)



IC C07C127-15
CC 36-6 (Plastics Manufacture and Processing)
ST polyether ureide **epoxy** hardener; **polyoxypropylenepolyamine** isocyanate adduct

IT **Epoxy** resins, uses and miscellaneous
(hardeners for, polyoxypropyleneureide derivs. as)
IT Crosslinking catalysts
(polyoxypropyleneureide derivs., for **epoxy** resins)
IT **Aminoplasts**
(polyoxypropyleneureide-based, manuf. of)
IT **1675-54-3**
(hardeners for, polyoxypropyleneureide derivs. as)
IT 57-13-6DP, reaction products with **polyoxypropylenepolyamines**
75-15-0DP, reaction products with
polyoxypropylenepolyamines 103-71-9DP, reaction products
with **polyoxypropylenepolyamines** 25214-70-4DP,
phosgenated, reaction products with **polyoxypropylenepolyamines***
** **25322-69-4DP, ureido derivs.**
(manuf. of, for ***aminoplast monomers and **epoxy**
resin hardeners)

L36 ANSWER 6 OF 8 HCA COPYRIGHT 2003 ACS on STN
84:166185 Flame-retardant cellulosics containing graft copolymerized acrylic esters of amides. Edelson, Nathan A.; Faessinger, Robert W. (Scott Paper Co., USA). U.S. US 3926872 19751216, 6 pp. (English). CODEN: USXXAM. APPLICATION: US 1974-508724 19740923.
AB Graft-polymn. of cellulosic fibers with aq. mixts. of CH2:CR1COZZ1Z2P(:O)(NR2)2 (R1 = Me or H; R = Me or MeCH2; Z, Z2 = O or NH; Z1 = CH2CH2, CH2CH2CHCl, or CH2) gave fireproofed fibers. Thus, 10 g knitted rayon fabric was immersed in 250 ml of an aq. emulsion contg. 1% NaOH, 0.96% **CS2**, and polyethylene glycol alkylaryl ether for 15 min, washed, immersed in 200 ml of an aq. mixt. contg. 0.004% Mohr's salt for few min, and washed. The dithiocarbonated fibers were immersed in a mixt. contg. 3 ml 30% H2O2, 5 g 2-(methacryloyloxy)ethyl tetramethylphosphorodiamidate [54641-24-6] [prepd. by mixing 500 ml diethyl ether with POCl3 [10025-87-3] 76.5, **triethylamine** (I) 50.5, and 2-hydroxyethyl methacrylate [868-77-9] 68 g, stirring for 72 hr at room temp., adding 101 g I and 45 g **dimethylamine** [124-40-3], and stirring for 72 hr at room temp.], and 500 ml H2O for 2.5 hr at 55-57.degree., washed, and dried to give a fabric with fireproofing rating (ASTM D-626-551) 2 (after 50 cycles of washing).
IT **106-90-1**
(reaction of, with **dimethylamine** and phosphorus oxychloride)
RN 106-90-1 HCA
CN 2-Propenoic acid, oxiranylmethyl ester (9CI) (CA INDEX NAME)



IC C08L; D06M
NCL 260017400GC

CC 39-10 (Textiles)
IT 2-Propenamide, N-[2-[[bis(**dimethylamino**)phosphinyl]**amino**]ethyl]-, polymers with cellulosic fibers
2-Propenoic acid, chloro-3-[[bis(**dimethylamino**)phosphinyl]oxy]propyl ester, polymers with cellulosic fibers
2-Propenoic acid, 2-methyl-, 2-[[bis(**diethylamino**)phosphinyl]oxy]ethyl ester, polymers with cellulosic fibers
2-Propenoic acid, 2-methyl-, 2-[[bis(**dimethylamino**)phosphinyl]oxy]ethyl ester, polymers with cellulosic fibers
Phosphorodiamidic acid, tetramethyl-, [(1-oxo-2-propenyl)**amino**]methyl ester, polymers with cellulosic fibers
(graft, fire-resistant)
IT 10025-87-3
(reaction of, with acrylic compds. and **secondary amines**)
IT **106-90-1** 54641-27-9
(reaction of, with **dimethylamine** and phosphorus oxychloride)
IT 868-77-9
(reaction of, with phosphorus oxychloride and **secondary amines**)

L36 ANSWER 7 OF 8 HCA COPYRIGHT 2003 ACS on STN
54:99719 Original Reference No. 54:18931a-c Asphaltic coatings and laminates from coal products and **polyepoxides**. (N. V. de Bataafsche Petroleum Maatschappij). GB 819107 19590826 (Unavailable). APPLICATION: GB .
AB The coal products used include coal tars, refined coal tars, and coal-tar pitches which have a softening point of <90.degree. and a soly. in **CS2** of at least 50%. The **polyepoxides** are org. materials having >1 **epoxy** group/mol. Products with high heat resistance and flexibility are obtained when the **polyepoxide** is present in an amt. of 15-75% by wt. of the mixt. Superior adhesion and solvent resistance are obtained when at least 30% **polyepoxide** is used. The compns. are cured by the action of **epoxy** curing agents, the amt. of agent being 0.5-200% by wt. of the **polyepoxide**. The **secondary** and **primary amines**, acids, and anhydrides are preferably used in at least stoichiometric proportions. Heat-activated curing agents can also be used. A nonskid coating is made by incorporating small inert particles in a proportion of at least 50% by wt. of the mixt. This coating is suitable for forming or restoring wearing surfaces of roads, aircraft runways, floors, etc.
CC 20 (Cement, Concrete, and Other Building Materials)
IT Airports
(asphaltic-**epoxy** resin coatings for runways of)
IT Floors
(coatings for, asphaltic-**epoxy** resin)
IT Paving
(coatings for, **epoxy** resin)
IT Pitch

(coatings from **epoxy** resins and, for floors, roads or runways)

IT Coating(s)
(for floors, roads or runways, asphaltic, from coal products and **epoxy** resins)

L36 ANSWER 8 OF 8 HCA COPYRIGHT 2003 ACS on STN
51:90659 Original Reference No. 51:16433b-i,16434a-e The reaction of carbonyl chloride with 1,2-**epoxides**. Jones, J. Idris (Chem. Research Lab., Teddington, UK). J. Chem. Soc. 2735-43 (Unavailable) 1957.

AB COCl2 (I) (1 mole) was found to add to 1 mole of an **epoxide** to form the corresponding 2-chlorosubstituted chloroformate. With 2 moles **epoxide** to 1 mole I, the product was the bis(2-chloroalkyl) carbonate. I (65.8 g.) was passed during 1.25 hrs. into 35.5 g. epoxyethane contg. 3 drops pyridine at -10.degree., the mixt. allowed to warm to room temp., dry air blown through the product until the wt. was const., then distd. to give 83 g. 2-chloroethyl chloroformate (II), b. 153.degree., b15 50.degree., nD20 1.4460, and 11 g. bis(2-chloroethyl) carbonate (III), b. 241.degree., b12 125.degree., nD20 1.4600. III was the sole product when 100 g. epoxyethane was treated with 101 g. I. Pyrolysis of II at 450.degree. gave ethylene dichloride; III remained unchanged under these conditions. Other attempts to prepare divinyl carbonate were also unsuccessful. I with 1,2-epoxycyclohexane gave 2-chlorocyclohexyl chloroformate (IV), b13 110-11.degree., nD25 1.4775, and 2 isomers of bis(2-chlorocyclohexyl) carbonate, m. 111.degree. and 65-6.degree.. That Walden inversion occurred on ring opening to give the trans form of IV was shown by converting trans-chlorocyclohexanol to the chlorohydrin, m. 25.degree., nD20 1.4891, then adding I to give a product identical with IV. 1,2-Epoxypropane reacted with I to give 2-chloro-1-methylethyl chloroformate, b16 59-60.degree., nD20 1.4420, identical to the product from 1-chloropropan-2-ol and I. 1,2-Epoxypropane (2 moles) and 1 mole I yielded 97.5% bis(2-chloro-1-methylethyl) carbonate, b16 133.degree., nD20 1.4522, which after several months partially crystd. and m. 50.degree. (from ligroine, b. 60-80.degree.). Similarly, I with 3-chloro-1,2-epoxypropane gave 2-chloro-1-(chloromethyl)ethyl chloroformate (V), b20 93.degree., nD20 1.4740, and bis(2-chloro-1-chloromethylethyl) carbonate, m. 47.5.degree., b22 185.degree.. Epoxyethane passed into V gave 87% 2-chloroethyl 2-chloro-1-(chloromethyl)ethyl carbonate, b13 152.degree., nD20 1.4798. I reacted with trans-2,3-epoxybutane to yield (.+-.)erythro-2-chloro-1-methylpropyl chloroformate, b15 62.5-3.5.degree., nD25 1.4400 (identical with an authentic specimen), and bis(2-chloro-1-methylpropyl) carbonate, b10 134-5.degree.. I and styrene oxide gave (.+-.)-2-chloro-1-phenylethyl chloroformate, b15 109.degree., and bis(2-chloro-1-phenylethyl) carbonate, one stereisomeric form m. 51.degree. [from ligroine (b. 60-80.degree.)-CHCl3]. No chloroformate could be isolated from the reaction of I and 1,2-**epoxy**-2,4,4-trimethylpentane. Decompn. occurred and only

1-chloro-2,4,4-trimethylpentan-2-ol and 1-chloro-2,4,4-trimethylpent-2-ene were identified. A series of 2-chloro-substituted carbamates and N-substituted carbamates have been prepd. from the appropriate chloroformate (1 mole) with NH3, **primary**, or **secondary amines** (2 moles), usually in C6H6. The hydrochlorides were filtered off and the carbamates distd. or crystd. from ligroine (b. 60-80.degree.)CHCl3. Compds. of structure ClCH2CH2OCOX were prepd. where X = NH2, 97%, m. 77.degree.; NHMe, 90%, m. 19.degree., b13 111.degree.; NHEt, 88%, m. 23.degree., b19 115-18.degree.; NHBu, 80%, b16 142-5.degree.; NHC5H11, 76%, b0.25 87-8.degree.; NHC6H13, 77%, m. 21.5.degree., b0.25 102-3.degree.; NHC7H15, 70%, m. 19.degree., b0.35 120.degree.; NHC8H17, 52%, m. 27.5, b0.15 135-6.degree.; NHPh, 91%, m. 52.degree., b1 148-50.degree.; NHC6H4Me-p, 88%, m. 62.degree., b1 168-70.degree.; NHC6H4Me-o, 73%, m. 49.degree.; NHC6H4Cl-o, 92%, m. 58.5.degree.; NHC6H4Cl-m, 83.degree., m. 50.degree.; NHC6H4Cl-p, 95%, m. 72.degree., NHC10H7-.alpha., 77%, m. 105.degree.; NHC10H7-.beta., 77%, m. 103.5.degree.; NEt2, 87%, b15 109-10.degree.; NPh2, 75%, m. 77.degree.; NPhMe, 82%, b0.1 112-15.degree.; N(CH2)5, 84%, b0.1 101-2.degree.. With structure ClCH2CHMeOCOX, where X = NH2, 95%, m. 63.degree.; NHMe, 92%, b15 116.degree.; NHBu, 83%, b15 145.degree.; NHC5H11, 72%, b0.15, 97-9.degree.; NHC6H13, 85%, m. 1.degree., b0.2 112-14.degree.; NHC7H15, 50%, m. 5.degree., b0.3 130-5.degree.; NHC8H17 64%, m. 9.degree., b0.15 120-1.degree.; NHPh, 95%, m. 37.degree., b0.1 145.degree.; NHC6H4Me-o, 81%, m. 53.degree.; NHC6H4Me-p, 97%, m. 55.degree.; NHC6H4Cl-o, 92%, b0.25, 122.degree.; NHC6H4Cl-m, 83%, b0.1 150-5.degree.; NHC6H4Cl-p, 93%, m. 65.5.degree.; NHC10H7-.alpha., 72%, m. 71.degree.; NHC10H7-.beta., 89%, m. 102.5.degree.; NEt2, 73%, b16, 110-11.degree.. With structure (ClCH2)2CHOCOX, where X = NH2, 80%, m. 84.degree.; NHMe, 89%, m. 20.degree., b0.2 105-7.degree.; NHPh, 89%, m. 78.degree.; NHC6H4Me-o, 87%, m. 72.degree.; NHC6H4Cl-o, 86%, m. 63.degree.; NHC6H4Cl-m, 92%, m. 72.5.degree.; NHC6H4Cl-p, 77%, m. 111.degree.; NHC10H7-.alpha., 91%, m. 121.degree.; NHC10H7-.beta., 90%, m. 104.5.degree.; NMe2, 97%, b0.15 102-4.degree.; NEt2, 63%, b0.15, 112-15.degree.. With structure ClCH2CHPhOCOX, where X = NH2, 98%, m. 71.degree.; NHMe, 84%, m. 53.degree.; NHEt, 80%, b0.15, 141-2.degree.; NHPh, 99%, m. 94.5.degree.; NHC6H4Cl-p, 96%, m. 96.degree.; NMe2, 90%, b0.15 138-9.degree.. With structure (.+-.)-erythro-CHClMeCHMeOCOX, where X = NH2, 96%, m. 67.5.degree.; NHMe, 65%, b16 120.degree.; NHPh, 77%, m. 66.degree.. With structure trans-C6H10ClOCOX, where X = NH2, 92%, m. 150.degree.; NHMe, 92%, m. 56.degree., b16 161.degree.. NH3 was passed into a soln. of 2-chloro-1-phenylethyl chloroformate in dry C6H6. NH4Cl pptd. and from the C6H6 soln. was obtained 2-chloro-1-phenylethyl carbamate (VI), m. 71.degree. (from ligroine (b. 60-80.degree.)-CHCl3), which treated with boiling H2O gave phenylethylene carbonate, m. 54-6.degree.. Crystn. of VI from MeOH also gave the carbonate. A convenient synthesis of N-substituted oxazolid-2-ones has been evolved based on the removal of HCl from N-substituted carbamates. A 10% EtOH soln. of KOH was added to the carbamate in 10% EtOH and heated a few min. at 100.degree.. The KCl

was removed by hot filtration and the oxazolidones recovered from the filtrate. The following 3,5-R'R'' substituted oxazolid-2-ones were made (R', R'', % yield, m.p. given): Ph, Ph, 97, 129.degree.; Ph, CH2Cl, 95, 108.degree.; .beta.-C10H7, Me, 95, 134.degree.; p-C6H4Me, Me, 93, 67.5.degree.; p-C6H4Cl, CH2Cl, 93, 126.5.degree.; p-C6H4Cl, Ph, 96, 131.degree.; p-C6H4Cl, Me, 94, 114.degree.; p-C6H4Cl, H, 92, 122.5.degree.; m-C6H4Cl, H, 95, 55.degree.. The reaction of epoxyethane and thiocarbonyl chloride did not proceed readily at room temp., the initially formed 2-chloroethyl chlorothioformate decompg. to ethylene dichloride and **CS2**. The infrared spectrum suggests the presence of a mixt. of isomeric bis(2-chloroethyl) thion- and thiolcarbonates.

CC 10 (Organic Chemistry)

IT 75-44-5, Phosgene 463-71-8, Thiophosgene
(reactions of, with **epoxides**)

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L37 ANSWER 1 OF 13 HCA COPYRIGHT 2003 ACS on STN

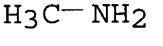
139:89246 Speciation of volatile organic compound emissions for regional air quality modeling of particulate matter and ozone. Makar, P. A.; Moran, M. D.; Scholtz, M. T.; Taylor, A. (Modelling and Integration Division, Air Quality Research Branch, Meteorological Service of Canada, Toronto, ON, Can.). Journal of Geophysical Research, [Atmospheres], 108(D2), ACH 2/1-ACH 2/51 (English) 2003. CODEN: JGRDE3. ISSN: 0148-0227. Publisher: American Geophysical Union.

AB A new classification scheme for speciation of org. compd. emissions for use in air quality models is described. This scheme uses 81 org. compd. classes to preserve net gas-phase reactivity and particulate matter (PM) formation potential. Chem. structure, vapor pressure, OH- reactivity, f.p./b.p., and soly. data were used to create the 81 compd. classes. Volatile, semi-volatile, and non-volatile org. compds. are included. This classification scheme was used in conjunction with the Canadian Emissions Processing System (CEPS) to process 1990 gas- and particle-phase org. compd. emissions data for summer and winter for a domain covering much of eastern North America. A simple post-processing model analyzed speciated org. emissions in terms of gas-phase reactivity and potential to form org. PM. Previously unresolved compd. classes which may significantly affect O3 formation included biogenic high-reactivity esters and internal C6-8 alkene-alcs. and anthropogenic ethanol and propanol. Org. radical prodn. assocd. with anthropogenic org. compd. emissions may be .gtoreq.1 orders of magnitude more important than biogenic-assocd. prodn. in northern USA and Canadian cities, and a factor of 3 more important in southern US cities. Previously unresolved org. compd. classes, e.g., low vapor pressure polycyclic arom. hydrocarbons (PAH), anthropogenic diacids, dialkyl phthalates, and high C no. alkanes, may have a significant impact on org. particle formation. Primary org. particles (poorly characterized in national emissions databases) dominate total org. particle concns., followed by

secondary formation and primary gas-particle partitioning. The effect of the assumed initial aerosol water concn. on subsequent thermodn. calcns. suggested hydrophobic and hydrophilic compds. may form external mixts., and that sep. treatment for these groups may be required in future air quality model simulations. The post-processing model used overestimated org. particle formation relative to measurements, lacked the complexity of a regional air quality model, and was not intended as an alternative to the latter. However, post-processing model results do provide guidance for treating org. gases and particles in future air quality modeling work. Future air quality model simulations should attempt to speciate primary particulate org. compds. and include more detailed org. compd. classes. Future emissions profile measurements should speciate gaseous high mol. mass org. compds. and primary orgs. emitted in particulate form (primary particle emissions are only available as a total particulate mass in currently available missions data).

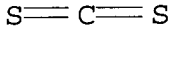
IT **74-89-5**, Methylamine, reactions **75-04-7**, Ethylamine, reactions **75-15-0**, **Carbon disulfide**, reactions **75-21-8**, Ethylene oxide, reactions **75-50-3**, Trimethylamine, reactions **75-56-9**, Propylene oxide, reactions **109-89-7**, Diethylamine, reactions **121-44-8**, Triethylamine, reactions **124-40-3**, Dimethylamine, reactions
(volatile org. compd. emission speciation for modeling regional air quality and particulate matter and ozone formation)

RN 74-89-5 HCA
CN Methanamine (9CI) (CA INDEX NAME)



RN 75-04-7 HCA
CN Ethanamine (9CI) (CA INDEX NAME)

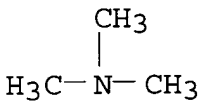
RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)



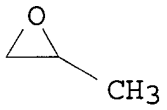
RN 75-21-8 HCA
CN Oxirane (9CI) (CA INDEX NAME)

RN 75-50-3 HCA

CN Methanamine, N,N-dimethyl- (9CI) (CA INDEX NAME)

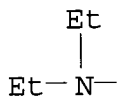


RN 75-56-9 HCA
CN Oxirane, methyl- (9CI) (CA INDEX NAME)

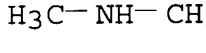


RN 109-89-7 HCA
CN Ethanamine, N-ethyl- (9CI) (CA INDEX NAME)

RN 121-44-8 HCA
CN Ethanamine, N,N-diethyl- (9CI) (CA INDEX NAME)



RN 124-40-3 HCA
CN Methanamine, N-methyl- (9CI) (CA INDEX NAME)



CC 59-2 (Air Pollution and Industrial Hygiene)
Section cross-reference(s): 53
IT 50-00-0, Formaldehyde, reactions 50-32-8, Benzo(a)pyrene, reactions 53-70-3, Dibenz[a,h]anthracene 56-23-5, Carbon tetrachloride, reactions 56-55-3, Benzo(a)anthracene 56-55-3D, Benzanthracene, alkyl derivs. 56-81-5, Glycerol, reactions 57-10-3, Palmitic acid, reactions 57-55-6, Propylene glycol, reactions 60-29-7, Ethylether, reactions 62-53-3, Aniline, reactions 64-17-5, Ethyl alcohol, reactions 64-18-6, Formic acid, reactions 64-19-7, Acetic acid, reactions 65-85-0, Benzoic acid, reactions 66-25-1, Hexanal 67-56-1, Methyl alcohol, reactions 67-63-0, Isopropylalcohol, reactions 67-64-1, Acetone, reactions 67-66-3, Chloroform, reactions 68-12-2, Dimethyl formamide, reactions 71-23-8, n-Propylalcohol, reactions 71-36-3, n-Butylalcohol, reactions 71-41-0, Pentanol, reactions 71-43-2, Benzene, reactions 71-43-2D, Benzene, alkyl derivs.

71-55-6, 1,1,1-Trichloroethane 74-82-8, Methane, reactions
74-84-0, Ethane, reactions 74-85-1, Ethylene, reactions 74-86-2,
Acetylene, reactions **74-89-5**, Methylamine, reactions
74-95-3, Methylene bromide 74-98-6, Propane, reactions 74-99-7,
Methylacetylene 75-00-3, Ethyl chloride 75-01-4, Vinyl chloride,
reactions **75-04-7**, Ethylamine, reactions 75-05-8,
Acetonitrile, reactions 75-07-0, Acetaldehyde, reactions
75-08-1, Ethyl mercaptan 75-09-2, Methylene chloride, reactions
75-15-0, **Carbon disulfide**, reactions
75-21-8, Ethylene oxide, reactions 75-28-5, Isobutane
75-34-3, 1,1-Dichloroethane 75-35-4, 1,1-Dichloroethene, reactions
75-45-6, Chlorodifluoromethane 75-46-7, Trifluoromethane
75-50-3, Trimethylamine, reactions **75-56-9**,
Propylene oxide, reactions 75-65-0, tert-Butylalcohol, reactions
75-69-4, Trichlorofluoromethane 75-71-8, Dichlorodifluoromethane
75-72-9, Chlorotrifluoromethane 75-73-0, Tetrafluoromethane
75-76-3, Tetramethylsilane 75-83-2, 2,2-Dimethylbutane 76-13-1
76-14-2 76-15-3 76-16-4, Hexafluoroethane 78-78-4, Isopentane
78-79-5, Isoprene, reactions 78-83-1, Isobutylalcohol, reactions
78-84-2, Isobutyraldehyde 78-87-5, Propylene dichloride 78-92-2,
sec-Butylalcohol 78-93-3, Methyl ethyl ketone, reactions
78-98-8, Methylglyoxal 79-00-5, 1,1,2-Trichloroethane 79-01-6,
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79-10-7, Acrylic acid, reactions 79-20-9, Methylacetate 79-29-8,
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.alpha.-Pinene 80-62-6, Methylmethacrylate 83-32-9, Acenaphthene
84-65-1, Anthraquinone 84-74-2, Dibutylphthalate 85-01-8,
Phenanthrene, reactions 85-01-8D, Phenanthrene, alkyl derivs.
85-44-9, Phthalic anhydride 85-68-7, Butylbenzylphthalate
86-73-7, Fluorene 87-44-5, Caryophyllene 88-99-3D, Phthalic
acid, dialkyl esters 91-20-3, Naphthalene, reactions 91-20-3D,
Naphthalene, alkyl derivs. 92-52-4, Biphenyl, reactions 95-13-6,
Indene 95-16-9, Benzothiazole 95-47-6, o-Xylene, reactions
95-48-7, o-Cresol, reactions 95-50-1, o-Dichlorobenzene 95-63-6,
1,2,4-Trimethylbenzene 96-14-0, 3-Methylpentane 96-33-3,
Methylacrylate 96-37-7, Methylcyclopentane 97-85-8,
Isobutylisobutyrate 98-00-0, Furfuryl alcohol 98-01-1,
2-Furfural, reactions 98-06-6, tert-Butylbenzene 98-55-5,
.alpha.-Terpineol 98-82-8, Cumene 98-95-3, Nitrobenzene,
reactions 99-30-9 99-49-0, Carvone 99-82-1 99-94-5
100-21-0, Terephthalic acid, reactions 100-41-4, Ethylbenzene,
reactions 100-42-5, Styrene, reactions 100-42-5D, Styrene, alkyl
derivs. 100-44-7, Benzyl chloride, reactions 100-51-6, Benzyl
alcohol, reactions 100-52-7, Benzaldehyde, reactions 100-80-1
101-68-8 101-77-9 103-29-7 103-65-1, Propylbenzene 103-71-9,
Phenyl isocyanate, reactions 104-51-8, Butylbenzene 104-76-7,
2-Ethylhexanol 105-37-3 105-57-7, Acetal 105-60-2,
Caprolactam, reactions 106-42-3, p-Xylene, reactions 106-46-7,
p-Dichlorobenzene 106-49-0, 4-Methylaniline, reactions 106-63-8,
Isobutylacrylate 106-65-0, Dimethylbutanedioate 106-89-8,
Epichlorohydrin, reactions 106-93-4, Ethylene dibromide
106-97-8, n-Butane, reactions 106-99-0, 1,3-Butadiene, reactions

107-00-6, 1-Butyne 107-02-8, Acrolein, reactions 107-06-2, Ethylene dichloride, reactions 107-13-1, Acrylonitrile, reactions 107-21-1, 1,2-Ethanediol, reactions 107-22-2, Glyoxal 107-31-3, Methylformate 107-39-1, 2,4,4-Trimethyl-1-pentene 107-40-4, 2,4,4-Trimethyl-2-pentene 107-41-5, Hexylene glycol 107-83-5, 2-Methylpentane 107-88-0, 1,3-Butanediol 108-05-4, Vinyl acetate, reactions 108-08-7, 2,4-Dimethylpentane 108-10-1, Methylisobutyl ketone 108-21-4, Isopropyl acetate 108-24-7, Acetic anhydride 108-31-6, Maleic anhydride, reactions 108-38-3, m-Xylene, reactions 108-67-8, 1,3,5-Trimethylbenzene, reactions 108-84-9 108-87-2, Methylcyclohexane 108-88-3, Toluene, reactions 108-90-7, Chlorobenzene, reactions 108-93-0, Cyclohexanol, reactions 108-94-1, Cyclohexanone, reactions 108-95-2, Phenol, reactions 108-95-2D, Phenol, alkyl derivs. 109-60-4, n-Propylacetate 109-66-0, Pentane, reactions 109-67-1, 1-Pentene 109-69-3, 1-Chlorobutane 109-86-4, Methyl cellosolve 109-87-5, Methylal **109-89-7**, Diethylamine, reactions 109-99-9, Tetrahydrofuran, reactions 110-19-0, Isobutylacetate 110-43-0, Methylamyl ketone 110-54-3, Hexane, reactions 110-63-4, 1,4-Butanediol, reactions 110-80-5, Cellosolve 110-82-7, Cyclohexane, reactions 110-83-8, Cyclohexene, reactions 110-86-1, Pyridine, reactions 111-15-9, Cellosolve acetate 111-46-6, reactions 111-65-9, Octane, reactions 111-66-0, 1-Octene 111-70-6, 1-Heptanol 111-76-2, Butyl cellosolve 111-77-3, Methylcarbitol 111-82-0, Methyl dodecanoate 111-84-2, Nonane 111-84-2D, Nonane, Me derivs. 111-87-5, Octanol, reactions 111-90-0, Carbitol 112-27-6, Triethylene glycol 112-30-1, Decanol 112-34-5, Butylcarbitol 112-39-0, Methylpalmitate 112-40-3, Dodecane 112-41-4, 1-Dodecene 112-61-8, Methyl stearate 112-95-8, Eicosane 115-07-1, Propene, reactions 115-10-6, Dimethylether 115-11-7, Isobutylene, reactions 120-12-7, Anthracene, reactions 120-12-7D, Anthracene, alkyl derivs. 120-12-7D, Anthracene, cyclopenta derivs. 120-61-6, Dimethylterephthalate **121-44-8**, Triethylamine, reactions 122-00-9 122-39-4, n-Phenylaniline, reactions 123-04-6, 3-(Chloromethyl)heptane 123-35-3, Myrcene 123-38-6, Propionaldehyde, reactions 123-42-2, Diacetone alcohol 123-51-3, Isoamylalcohol 123-66-0, Ethylhexanoate 123-72-8, Butyraldehyde 123-86-4, n-Butylacetate 124-04-9, Adipic acid, reactions 124-09-4, Hexamethylenediamine, reactions 124-10-7, Methyl myristate 124-11-8, 1-Nonene 124-17-4 124-18-5, Decane 124-18-5D, Decane, Me derivs. **124-40-3**, Dimethylamine, reactions 126-99-8, Chloroprene 127-18-4, Perchloroethylene, reactions 127-91-3, .beta.-Pinene 129-00-0, Pyrene, reactions 131-11-3, Dimethylphthalate 131-16-8, Dipropylphthalate 135-01-3, 1,2-Diethylbenzene 135-98-8, sec-Butylbenzene 136-60-7, Butylbenzoate 138-86-3, Limonene 140-66-9
(volatile org. compd. emission speciation for modeling regional air quality and particulate matter and ozone formation)

L37 ANSWER 2 OF 13 HCA COPYRIGHT 2003 ACS on STN
137:78780 Triphosgene: a versatile reagent for the synthesis of

azetidin-2-ones. Krishnaswamy, D.; Govande, V. V.; Gumaste, V. K.; Bhawal, B. M.; Deshmukh, A. R. A. S. (Division of Organic Chemistry (Synthesis), National Chemical Laboratory, Pune, 411 008, India). Tetrahedron, 58(11), 2215-2225 (English) 2002. CODEN: TETRAB. ISSN: 0040-4020. OTHER SOURCES: CASREACT 137:78780. Publisher: Elsevier Science Ltd..

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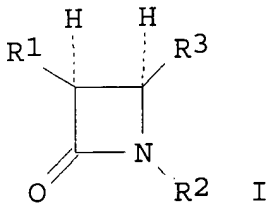


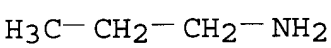
I

AB An efficient use of triphosgene, as an acid activator, for the synthesis of substituted azetidin-2-ones, e.g. I (R1 = PhO; R2 = Ph, p-methoxyphenyl; R3 = Ph, p-methoxyphenyl, styryl), via ketene-imine cycloaddn. reaction using various acids and imines have been described.

IT **75-15-0**, **Carbon disulfide**, reactions
107-10-8, Propylamine, reactions
(use of triphosgene as an acid activator for the synthesis of azetidin-2-ones via ketene-imine cycloaddn. reaction)

RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)

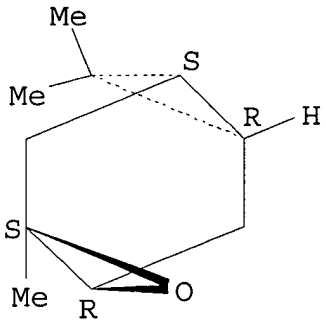
RN 107-10-8 HCA
CN 1-Propanamine (9CI) (CA INDEX NAME)



IT **936-91-4P**
(use of triphosgene as an acid activator for the synthesis of azetidin-2-ones via ketene-imine cycloaddn. reaction)

RN 936-91-4 HCA
CN 4-Oxatricyclo[5.1.0.03,5]octane, 3,8,8-trimethyl-, (1S,3S,5R,7R)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



CC 26-5 (Biomolecules and Their Synthetic Analogs)

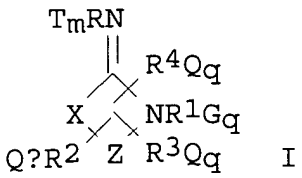
IT 62-53-3, Aniline, reactions **75-15-0**, **Carbon disulfide**, reactions 79-11-8, Chloroacetic acid, reactions 94-75-7, reactions 100-46-9, Benzylamine, reactions 104-94-9, 4-Methoxyaniline **107-10-8**, Propylamine, reactions 109-80-8, 1,3-Propanedithiol 122-59-8 459-73-4 498-15-7, (+)-3-Carene 563-96-2 616-34-2 625-45-6 1613-90-7 1613-96-3 1624-46-0 1750-36-3 4702-13-0 7625-53-8 67065-62-7 71809-65-9 88315-63-3 99333-54-7 176702-13-9 184716-90-3 247244-38-8
(use of triphosgene as an acid activator for the synthesis of azetidin-2-ones via ketene-imine cycloaddn. reaction)

IT **936-91-4P** 18805-23-7P 20461-89-6P, 1,3-Dithiane-2-carboxylic acid 33692-63-6P 54985-61-4P 54985-63-6P 58091-08-0P 99341-68-1P 105417-41-2P 142311-88-4P 312298-39-8P
(use of triphosgene as an acid activator for the synthesis of azetidin-2-ones via ketene-imine cycloaddn. reaction)

L37 ANSWER 3 OF 13 HCA COPYRIGHT 2003 ACS on STN

133:120323 Preparation of 2-aryliminothiazolidines and related compds. progesterone receptor binding agents. Dixon, Brian R.; Bagi, Cedo M.; Brennan, Catherine R.; Brittelli, David R.; Bullock, William H.; Chen, Jinshan; Collibee, William L.; Dally, Robert; Johnson, Jeffrey S.; Kluender, Harold C. E.; Lathrop, William F.; Liu, Peiying; Mase, Carol Ann; Redman, Aniko M.; Scott, William J.; Urbahns, Klaus; Wolanin, John J. (Bayer Corporation, USA). PCT Int. Appl. WO 2000042031 A2 20000720, 274 pp. DESIGNATED STATES: W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1999-US29601 19991214. PRIORITY: US 1999-231906 19990114.

GI

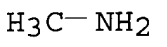


I

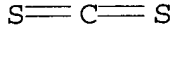
AB Title compds. (I; T = alkyl, alkoxy, aryl, CO2H, alkenyl, alkynyl, CHO, OH, NO2, cyano, halo, OCF3, etc.; R = aryl, heteroaryl; R1 = alkyl, cycloalkyl, heterocycloalkyl, alkenyl, cycloalkenyl, alkynyl; R2-R4 = H, alkyl, cycloalkyl, alkenyl, cycloalkenyl, aryl, heteroaryl, halo, O, etc.; X = O, S, SO, SO2; G = halo, OH, O, alkyl, alkenyl, cycloalkyl, heterocycloalkyl, cycloalkenyl, aryl, heteroaryl, etc.; m = 1-5; p, q = 0-4; Z = CnH2n-r; n = 2-5; r = sum of non-H substituents R2, R3, R4; with provisos), were prepd. Thus, title compd. (II), prepd. from 2-chloroethylammonium chloride, 2-methyl-4-nitrophenyl isothiocyanate, and iso-Bu bromide, at 200 nM gave 80-100% inhibition of 3H-progesterone to the progesterone receptor.

IT **74-89-5**, Methylamine, reactions **75-15-0**, **Carbon disulfide**, reactions **75-21-8**, Oxirane, reactions **78-81-9**, Isobutylamine **96-15-1**, 2-Methyl-1-butylamine **617-79-8 4436-24-2** **13952-84-6**, sec-Butylamine **34985-37-0**
(prepn. of 2-aryliminothiazolidines and related compds. progesterone receptor binding agents)

RN 74-89-5 HCA
CN Methanamine (9CI) (CA INDEX NAME)

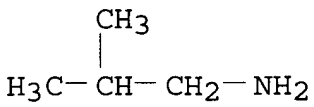


RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)

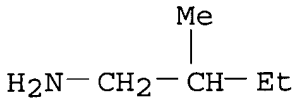


RN 75-21-8 HCA
CN Oxirane (9CI) (CA INDEX NAME)

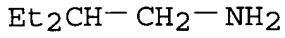
RN 78-81-9 HCA
CN 1-Propanamine, 2-methyl- (9CI) (CA INDEX NAME)



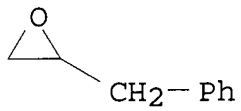
RN 96-15-1 HCA
CN 1-Butanamine, 2-methyl- (9CI) (CA INDEX NAME)



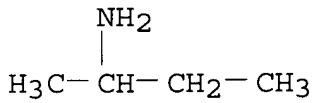
RN 617-79-8 HCA
CN 1-Butanamine, 2-ethyl- (9CI) (CA INDEX NAME)



RN 4436-24-2 HCA
CN Oxirane, (phenylmethyl)- (9CI) (CA INDEX NAME)

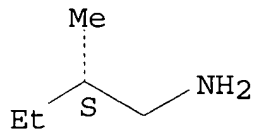


RN 13952-84-6 HCA
CN 2-Butanamine (9CI) (CA INDEX NAME)



RN 34985-37-0 HCA
CN 1-Butanamine, 2-methyl-, (2S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



IC ICM C07D277-18
ICS C07D277-54; C07D277-60; C07D263-28; C07D263-52; C07D279-06; C07D281-02; C07D417-12; A61K031-421; A61K031-423; A61K031-426; A61K031-428; A61K031-54; A61K031-55; A61P009-00; A61P015-00;

A61P015-04; A61P015-08; A61P015-16; A61P019-10
CC 28-7 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1
IT 52-52-8, 1-Aminocyclopentanecarboxylic acid 61-90-5, L-Leucine, reactions **74-89-5**, Methylamine, reactions 75-05-8, Acetonitrile, reactions **75-15-0**, **Carbon disulfide**, reactions **75-21-8**, Oxirane, reactions 75-52-5, Nitromethane, reactions 78-77-3, Isobutyl bromide **78-81-9**, Isobutylamine 78-84-2, Isobutyraldehyde 79-03-8, Propionyl chloride 79-11-8, Chloroacetic acid, reactions 87-59-2, 2,3-Dimethylaniline **96-15-1**, 2-Methyl-1-butylamine 96-34-4, Methyl chloroacetate 99-52-5 100-46-9, Benzylamine, reactions 108-94-1, Cyclohexanone, reactions 109-77-3, Malononitrile 120-92-3, Cyclopentanone 124-68-5, 2-Amino-2-methyl-1-propanol 137-43-9, Cyclopentyl bromide 141-43-5, reactions 156-87-6, 3-Aminopropanol 598-78-7, .alpha.-Chloropropionic acid 616-27-3, 1-Chloro-2-butanone **617-79-8** 624-65-7, 3-Chloro-1-propyne 627-15-6, 1,3-Dibromopropene 629-04-9, 1-Heptyl bromide 630-17-1, 2,2-Dimethylpropyl bromide 693-58-3, 1-Nonyl bromide 769-27-7, 6-Amino-3-cyano-2,4-dimethylpyridine 867-13-0, Triethyl phosphonoacetate 870-24-6 874-78-2 921-48-2, 2-Chloro-3-methylpentanoic acid 1066-54-2, Trimethylsilylacetylene 1067-71-6, Diethyl 2-oxopropylphosphonate 1458-98-6, 3-Bromo-2-methylpropene 1809-10-5, 3-Bromopentane 1821-39-2, 2-Propylaniline 2131-61-5, 4-Nitrophenyl isothiocyanate 2404-35-5, Cycloheptyl bromide 2550-36-9, Bromomethylcyclohexane 2554-93-0 2567-14-8, 1,1,3-Trichloro-1-propene 2695-48-9, 8-Bromo-1-octene 2719-32-6, 4-Cyanophenyl isothiocyanate 2756-85-6, 1-Aminocyclohexane-1-carboxylic acid 2854-16-2 3182-87-4 3355-28-0, 1-Bromo-2-butyne 3814-34-4, 2-Ethylbutyl bromide 3884-71-7, 5-Bromo-2-pentanone 4399-47-7, Cyclobutyl bromide 4424-17-3 **4436-24-2** 4755-72-0 4897-84-1, Methyl 4-bromobutanoate 5044-50-8 5162-44-7, 4-Bromo-1-butene 5744-27-4 5874-57-7 5913-13-3 5973-11-5, 2-Methylbutyl bromide 6288-63-7 6590-95-0, 2,6-Dichlorophenyl isothiocyanate 6590-96-1, 2,4-Dichlorophenyl isothiocyanate 6590-97-2, 2,3-Dichlorophenyl isothiocyanate 7051-34-5, Cyclopropylmethyl bromide 7515-68-6 7527-65-3 10061-02-6, (E)-1,3-Dichloropropene 13547-70-1, 1-Chloro-3,3-dimethyl-2-butanone 13734-41-3 **13952-84-6**, sec-Butylamine 16966-07-7 17016-12-5 17247-58-4 17430-98-7 18448-47-0, Methyl cyclohex-1-enecarboxylate 21635-10-9 22133-98-8 22134-07-2, 2,4,6-Trichlorophenyl isothiocyanate 22507-54-6 23510-06-7 29671-29-2, 2-Chloro-4-methylpentanoic acid 30613-77-5 31294-93-6, 4-Iodoheptane 33884-43-4, 2-(2-Bromoethyl)-1,3-dioxane 34723-82-5 **34985-37-0** 35075-82-2 54423-01-7 55474-31-2 55474-91-4 83890-31-7 85771-09-1 86317-36-4 96784-54-2, 3-Methyl-4-nitrobenzonitrile 99195-86-5 101654-29-9 109029-20-1 111652-20-1 135805-96-8 138001-48-6 156212-59-8 170230-87-2, 4-Amino-3-ethylbenzonitrile 190774-55-1, 2-Methoxy-4-nitrophenyl isothiocyanate 285124-67-6 285124-68-7

285124-69-8 285124-70-1 285124-71-2 285124-72-3 285124-73-4
285124-74-5 285124-75-6 285124-80-3 285124-81-4 285124-82-5
285124-83-6 285124-84-7 285124-85-8 285124-86-9 285124-87-0
285124-88-1 285124-89-2 285124-90-5 285124-91-6 285124-92-7
285124-93-8 285124-94-9 285124-95-0 285124-96-1 285124-97-2
285124-98-3 285124-99-4 285125-00-0 285125-01-1 285125-02-2
285125-03-3 285125-04-4 285125-05-5 285125-06-6 285125-07-7
285125-08-8 285125-09-9 285125-10-2 285125-11-3 285125-12-4
285125-13-5 285125-14-6 285125-15-7 285125-16-8 285125-17-9
285125-18-0 285125-19-1 285125-20-4 285125-21-5 285125-22-6
285125-23-7 285125-24-8 285125-25-9 285125-26-0 285125-27-1
285125-28-2 285125-29-3 285125-30-6 285125-31-7 285125-32-8
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285125-68-0 285125-69-1 285125-70-4 285125-71-5 285125-72-6
285125-73-7 285125-74-8 285125-75-9 285125-76-0 285125-77-1
285125-78-2 285125-79-3 285125-80-6 285125-81-7 285125-82-8
285125-83-9
(prepn. of 2-aryliminothiazolidines and related compds. progesterone receptor binding agents)

L37 ANSWER 4 OF 13 HCA COPYRIGHT 2003 ACS on STN
124:18104 Rv-Dependent interstellar photodestruction rates.
Cecchi-Pestellini, Cesare; Aiello, Santi; Barsella, Bruno (Mathematics Dep., Univ. of Manchester Inst. of Science and Technology, Manchester, M60 1QD, UK). Astrophysical Journal, Supplement Series, 100(1), 187-212 (English) 1995. CODEN: APJSA2. ISSN: 0067-0049. Publisher: University of Chicago Press.

AB The photodestruction of mols. is an important process in interstellar chem. There are substantial differences in the UV extinction properties that correlate quite strongly to the value of Rv, the ratio of total to selective extinction. Since interstellar photodestruction rates depend on the level of extinction, we carried out Rv-dependent rate calcns. Dust scattering parameters were environmentally characterized by deriving grain size distributions as a function of the level of the extinction. Since the interior of dark clouds can be much better illuminated at UV wavelengths than their nominal optical depth would suggest, photodestruction processes proceed at much faster rates than a direct use of the mean interstellar extinction curve might lead us to predict.

IT **74-89-5**, Methanamine, reactions **75-15-0**, **Carbon disulfide**, reactions **157-18-6**, Oxirene **2053-29-4**, Methanimine
(interstellar photodestruction rates of mols.)

RN 74-89-5 HCA
CN Methanamine (9CI) (CA INDEX NAME)

RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)

RN 157-18-6 HCA
CN Oxirene (8CI, 9CI) (CA INDEX NAME)

RN 2053-29-4 HCA
CN Methanimine (9CI) (CA INDEX NAME)

CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73

IT 50-00-0, Formaldehyde, reactions 64-17-5, Ethanol, reactions 64-18-6, Formic acid, reactions 67-56-1, Methanol, reactions 67-64-1, Acetone, reactions 74-82-8, Methane, reactions 74-85-1, Ethene, reactions 74-86-2, Ethyne, reactions **74-89-5**, Methanamine, reactions 74-90-8, Hydrogen cyanide, reactions 74-99-7, Propyne 75-05-8, Acetonitrile, reactions 75-07-0, Acetaldehyde, reactions 75-13-8, Isocyanic acid **75-15-0**, **Carbon disulfide**, reactions 124-38-9, Carbon dioxide, reactions **157-18-6**, Oxirene 460-12-8, 1,3-Butadiyne 463-58-1, Carbonyl sulfide 1070-71-9, 2-Propynenitrile **2053-29-4**, Methanimine 2074-87-5, Cyanogen 2597-44-6, Formyl 3315-37-5, Methylidyne 3352-57-6, Hydroxyl, reactions 7446-09-5, Sulfur oxide (SO2), reactions 7647-01-0, Hydrogen chloride, reactions 7664-41-7, Ammonia, reactions 7722-84-1, Hydrogen peroxide, reactions 7732-18-5, Water, reactions 7782-44-7, Oxygen, reactions 7783-06-4, Hydrogen sulfide (H2S), reactions 10102-43-9, Nitric oxide, reactions 10102-44-0, Nitrogen dioxide, reactions 11127-17-6, Tricarbon monoxide 12070-15-4, Carbon cluster (C2) 12075-35-3, Carbon cluster (C3) 13770-40-6, Amino 24361-82-8, Methyliumylidene
(interstellar photodestruction rates of mols.)

L37 ANSWER 5 OF 13 HCA COPYRIGHT 2003 ACS on STN
123:111509 Kinetic racemate-cleavage of saturated three-ring heterocycles. Keim, Wilhelm; Brunner, Melanie; Musmann, Lothar; Vogt, Dieter (Hoechst A.-G., Germany). Ger. Offen. DE 4333686 A1

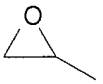
19950406, 12 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1993-4333686 19931002.

AB In the title process, a monosubstituted, satd., 3-ring heterocycle (e.g., n-butyloxirane) is reacted with a complex comprising a chiral alc. or amino alc. complex with a Lewis acid compd. of Ti or Zr, and stereoselective nucleophilic substitution is conducted by the addn. of a nucleophile (e.g., Et2NH, thiols, etc.), producing a chiral product (e.g., D- or L-2-amino-1-hexanol). A kinetic diagram of the reaction is presented.

IT **96-09-3**, (.+-.)-Styrene oxide **1436-34-6**, (.+-.)-Butyloxirane
(effect of kinetic racemate-cleavage of satd. three-ring heterocycles upon)

RN 96-09-3 HCA

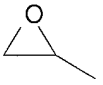
CN Oxirane, phenyl- (9CI) (CA INDEX NAME)



Ph

RN 1436-34-6 HCA

CN Oxirane, butyl- (9CI) (CA INDEX NAME)

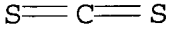


Bu-n

IT **75-15-0**, **Carbon disulfide**, reactions
109-89-7, reactions
(effect of kinetic racemate-cleavage of satd. three-ring heterocycles upon nucleophilic substitution reactions using)

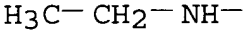
RN 75-15-0 HCA

CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)



RN 109-89-7 HCA

CN Ethanamine, N-ethyl- (9CI) (CA INDEX NAME)

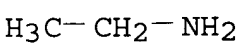


IC ICM C07B057-00
ICS C07C213-02; B01J031-22; C07D303-04; C07D303-12; C07D303-34; C07D331-02; C07D203-06; A61K031-47; A61K031-40; A61K031-34

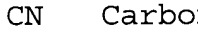
ICA C07C069-70; C07C043-10; C07C039-12; C07C035-22; C07C031-20; C07C031-22; C07C215-04; C07C215-08; C07C215-46

CC 22-3 (Physical Organic Chemistry)
Section cross-reference(s): 21, 23, 67
IT **96-09-3**, (.+-.)-Styrene oxide 106-89-8, (.+-.)-Epichlorohydrin, reactions **1436-34-6**, (.+-.)-Butyloxirane
(effect of kinetic racemate-cleavage of satd. three-ring heterocycles upon)
IT **75-15-0**, **Carbon disulfide**, reactions **109-89-7**, reactions 124-38-9, Carbon dioxide, reactions 463-58-1, Carbon oxysulfide
(effect of kinetic racemate-cleavage of satd. three-ring heterocycles upon nucleophilic substitution reactions using)

L37 ANSWER 6 OF 13 HCA COPYRIGHT 2003 ACS on STN
116:87369 A generalization of laminar burning velocities and volumetric heat release rates. Bradley, D.; El-Din Habik, S.; El-Sherif, S. A. (Dep. Mech. Eng., Univ. Leeds, Leeds, LS2 9JT, UK). Combustion and Flame, 87(3-4), 336-46 (English) 1991. CODEN: CBFMAO. ISSN: 0010-2180.
AB The max. measured values of combustion velocities of liq. fuels with air are surveyed. A degree of generalization of these values was suggested in terms of the chem. structure of the fuel. For lean mixts. and different classes of gaseous and liq. fuels, the combustion velocity varies approx. linearly with the heat of reaction of a mole of the premixt. The classical expression for laminar combustion velocity helps to explain relationships obsd. between both the integral of the normalized computed volumetric heat release rate with respect to fractional temp. increase and the position of the centroid of this integral, .theta.c, and the product of the molar heat of reaction and the combustion velocity. A generalized correlation is shown to exist between the combustion velocity eigenvalue and .theta.c. Finally, an algebraic expression is suggested, in terms of two variables, for the profile of normalized heat release rate against fractional temp. increase.
IT **75-04-7**, Ethylamine, reactions **75-15-0**, Carbondisulfide, reactions **75-21-8**, Ethyleneoxide, reactions **75-31-0**, Isopropylamine, reactions **75-50-3**, reactions **75-56-9**, Propyleneoxide, reactions
(combustion of, velocity and volumetric heat release rates of, mol. structure in relation to)
RN 75-04-7 HCA
CN Ethanamine (9CI) (CA INDEX NAME)

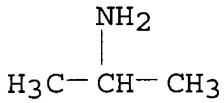


RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)

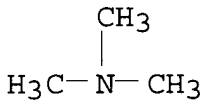


RN 75-21-8 HCA
CN Oxirane (9CI) (CA INDEX NAME)

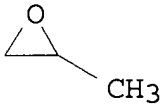
RN 75-31-0 HCA
CN 2-Propanamine (9CI) (CA INDEX NAME)



RN 75-50-3 HCA
CN Methanamine, N,N-dimethyl- (9CI) (CA INDEX NAME)



RN 75-56-9 HCA
CN Oxirane, methyl- (9CI) (CA INDEX NAME)



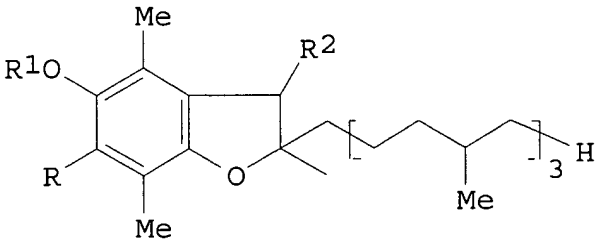
CC 51-12 (Fossil Fuels, Derivatives, and Related Products)
Section cross-reference(s): 50
IT 60-29-7, Diethylether, reactions 64-17-5, Ethanol, reactions
67-56-1, Methanol, reactions 67-63-0, Isopropylalcohol, reactions
67-64-1, Acetone, reactions 71-43-2, Benzene, reactions
75-04-7, Ethylamine, reactions 75-07-0, Acetaldehyde,
reactions **75-15-0**, Carbondisulfide, reactions 75-18-3
75-21-8, Ethyleneoxide, reactions 75-29-6,
Isopropylchloride **75-31-0**, Isopropylamine, reactions
75-33-2, 2-Propanethiol **75-50-3**, reactions **75-56-9**
, Propyleneoxide, reactions 75-76-3, Tetramethylsilane 75-83-2,
2,2-Dimethylbutane 78-78-4, 2-Methylbutane 78-79-5,
2-Methylbuta-1,3-diene, reactions 78-93-3, 2-Butanone, reactions
79-29-8, 2,3-Dimethylbutane 95-47-6, 1,2-Dimethylbenzene,
reactions 95-63-6 96-14-0, 3-Methylpentane 96-37-7,
Methylcyclopentane 98-06-6, tert-Butylbenzene 101-81-5,
Diphenylmethane 104-51-8, Butylbenzene 107-02-8, 2-Propenal,
reactions 107-05-1, Allylchloride 107-40-4, 2,2,4-Trimethylpent-
3-ene 107-83-5, 2-Methylpentane 108-05-4, Acetic acid ethenyl

ester, reactions 108-08-7, 2,4-Dimethylpentane 108-20-3, Diisopropylether 108-87-2, Methylcyclohexane 108-88-3, Toluene, reactions 109-66-0, Pentane, reactions 109-67-1, 1-Pentene 109-69-3, Butylchloride 109-87-5, Dimethoxymethane 109-99-9, reactions 110-00-9, Furan 110-05-4, tert-Butylperoxide 110-54-3, Hexane, reactions 110-82-7, Cyclohexane, reactions 110-83-8, Cyclohexene, reactions 119-64-2, Tetralin 123-38-6, Propionaldehyde, reactions 124-18-5, Decane 141-78-6, Ethylacetate, reactions 142-29-0, Cyclopentene 142-68-7, Tetrahydropyran 142-82-5, Heptane, reactions 287-92-3, Cyclopentane 463-82-1, 2,2-Dimethylpropane 464-06-2, 2,2,3-Trimethylbutane 496-15-1 513-81-5 540-54-5, Propylchloride 540-84-1, 2,2,4-Trimethylpentane 544-76-3, Hexadecane 563-45-1, 3-Methylbut-1-ene 563-46-2 564-02-3, 2,2,3-Trimethylpentane 565-59-3, 2,3-Dimethylpentane 590-19-2, Buta-1,2-diene 591-93-5, Penta-1,4-diene 591-95-7, Penta-1,2-diene 591-96-8, Penta-2,3-diene 592-41-6, 1-Hexene, reactions 592-42-7, 1,5-Hexadiene 598-61-8, Methylcyclobutane 627-19-0, 1-Pentyne 628-71-7, 1-Heptyne 691-37-2, 4-Methylpent-1-ene 693-02-7, 1-Hexyne 763-29-1, 2-Methylpent-1-ene 872-05-9, 1-Decene 917-92-0, 3,3-Dimethyl-1-butyne 1120-56-5, Methylenecyclobutane 1574-41-0 1825-62-3, Trimethylethoxysilane 2004-70-8 3638-35-5 4663-22-3, 2-Cyclopropylpropene 5750-02-7 7154-75-8, 4-Methyl-1-pentyne 25377-72-4, Pentene 25512-65-6, Dihydropyran (combustion of, velocity and volumetric heat release rates of, mol. structure in relation to)

L37 ANSWER 7 OF 13 HCA COPYRIGHT 2003 ACS on STN

112:179519 Preparation of .alpha.-tocopherol homolog. Sato, Kikumasa; Inoue, Seiichi; Momotari, Tsutomu (Eisai Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 01233276 A2 19890919 Heisei, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1988-57987 19880311.

GI

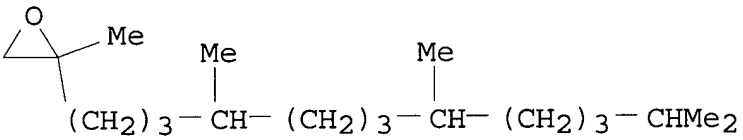


I

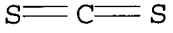
AB The title compd. I (R = Me, R1 = R2 = H) (II) is prepd. by desulfurization of I (R = CH2SCSNMe2, R1 = H, R2 = SCHMe2) (III). Cyclization of diastereomer mixts. of 2-(2-acetoxy-1-isopropylthio-2,6,10,14-tetramethylpentadecyl)-3,6-dimethylhydroquinone 4-acetate (prepd. from 2,5-dimethylhydroquinone monoacetate and

2-acetoxy-2,6,10,14-tetramethylpentadecyl iso-Pr sulfide) in CH2Cl2 in presence of HCl at room temp. for 20 h gave 81% I (R = H, R1 = Ac, R2 = SCHMe2), which was hydrolyzed to give 88% I (R = R1 = H, R2 = SCHMe2) (IV). IV was stirred with **CS2**, formalin, and Me2NH at room temp. for 1 h and under reflux for 13 h to give 94% III, which was stirred in EtOH in presence of Raney Ni to give 76% II.

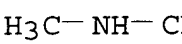
IT **69371-89-7P**
(prepn. and reaction of, in synthesis of .alpha.-tocopherol homolog)
RN 69371-89-7 HCA
CN Oxirane, 2-methyl-2-(4,8,12-trimethyltridecyl)- (9CI) (CA INDEX NAME)



IT **75-15-0**, **Carbon disulfide**, reactions
(reaction of, with benzofuran and dimethylamine and formalin, in synthesis of .alpha.-tocopherol homolog)
RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)



IT **124-40-3**, Dimethylamine, reactions
(reaction of, with **carbon disulfide** and formalin and benzofuran, in synthesis of .alpha.-tocopherol homolog)
RN 124-40-3 HCA
CN Methanamine, N-methyl- (9CI) (CA INDEX NAME)



IC ICM C07D307-82
ICA C07D307-79
CC 30-20 (Terpenes and Terpenoids)
IT 709-17-1P **69371-89-7P** 126248-99-5P
(prepn. and reaction of, in synthesis of .alpha.-tocopherol homolog)
IT 126249-02-3P
(prepn. and reaction of, with **carbon disulfide** and formalin and dimethylamine)
IT 50-00-0, Formaldehyde, reactions
(reaction of, with benzofuran and **carbon disulfide** and dimethylamine, in synthesis of

.alpha.-tocopherol homolog)

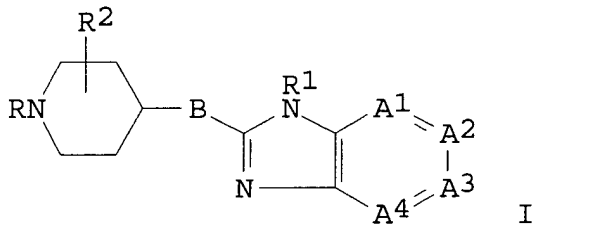
IT **75-15-0**, **Carbon disulfide**, reactions
(reaction of, with benzofuran and dimethylamine and formalin, in synthesis of .alpha.-tocopherol homolog)

IT **124-40-3**, Dimethylamine, reactions
(reaction of, with **carbon disulfide** and formalin and benzofuran, in synthesis of .alpha.-tocopherol homolog)

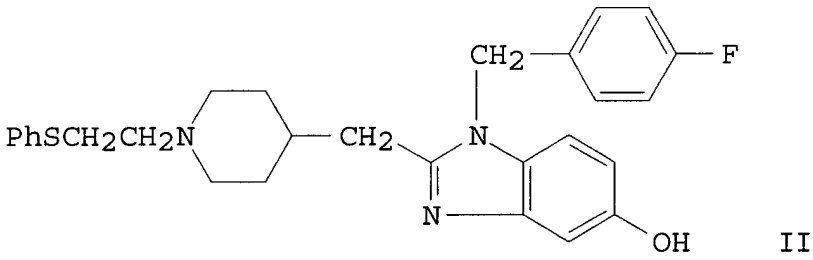
L37 ANSWER 8 OF 13 HCA COPYRIGHT 2003 ACS on STN

109:37821 Preparation of 4-[(bicyclic heterocyclyl)methyl]piperidines and analogs as antihistaminics. Janssens, Frans E.; Kennis, Ludo E. J.; Hens, Jozef F.; Torremans, Joseph L. G.; Diels, Gaston S. M. (Janssen Pharmaceutica N. V., Belg.). U.S. US 4695575 A 19870922, 59 pp. Cont.-in-part of U.S. Ser. No. 571,135, abandoned. (English). CODEN: USXXAM. APPLICATION: US 1985-747754 19850624. PRIORITY: US 1984-569369 19840109; US 1984-671135 19841113.

GI



I



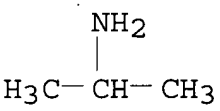
II

AB The title compds. [I; 3 of A1-A4 = (un)substituted CH, the 4th = N, (un)substituted CH; B = CH2, O, SO, SO2; R = substituted C1-6 alkyl, alkoxy, alkylthio, amino, pyrrolidinyl, piperidinyl, hexahydroazepinyl, etc.; R1 = H, alkyl, cycloalkyl, (un)substituted aryl, heteroaryl, (hetero)aralkyl; R2 = H, alkyl] and their stereoisomers and acid salts were prepd. as antihistaminics and serotonin antagonists. 1-[(4-Fluorophenyl)methyl]-2-(4-piperidinylmethyl)-1H-benzimidazol-5-ol and PhSCH2CH2Br were refluxed 2 h in Me2CHCH2COMe contg. Na2CO3 to give 27.8% benzimidazole deriv. (II). I inhibited compd. 48/80-induced lethality in rats, caused by histamine release, with ED50 of 0.005-0.16 mg/kg s.c. or orally. I also inhibited gastric lesions

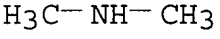
caused by simultaneous release of serotonin.

IT **75-21-8**, Oxirane, reactions
(N-alkylation by, or piperidine deriv.)
RN 75-21-8 HCA
CN Oxirane (9CI) (CA INDEX NAME)

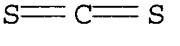
IT **75-31-0**, 2-Propanamine, reactions
(amidation by, of bromopropionyl chloride)
RN 75-31-0 HCA
CN 2-Propanamine (9CI) (CA INDEX NAME)



IT **124-40-3**, reactions
(condensation of, with urea deriv. and N-(aminoethyl)piperidine deriv.)
RN 124-40-3 HCA
CN Methanamine, N-methyl- (9CI) (CA INDEX NAME)



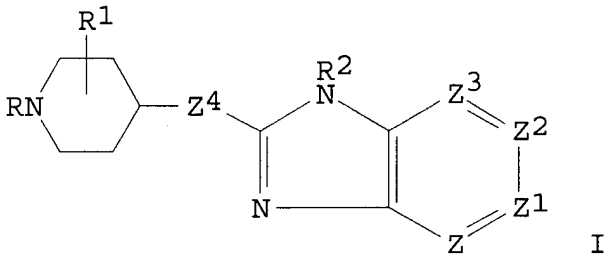
IT **75-15-0**, **Carbon disulfide**, reactions
(cyclocondensation of, with pyrimidinediamine deriv.)
RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)



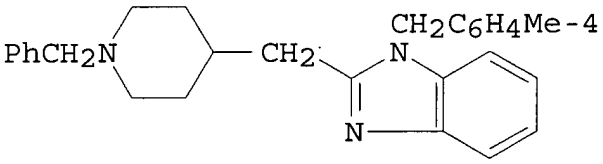
IC ICM A61K031-445
ICS C07D401-12
NCL 514322000
CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1
IT **75-21-8**, Oxirane, reactions 100-69-6 107-14-2 144-48-9 1716-42-3 61380-07-2 62780-89-6 86487-54-9 86721-12-2 91125-08-5
(N-alkylation by, or piperidine deriv.)
IT **75-31-0**, 2-Propanamine, reactions
(amidation by, of bromopropionyl chloride)
IT 99959-94-1
(condensation of, with **carbon disulfide**)
IT **124-40-3**, reactions
(condensation of, with urea deriv. and N-(aminoethyl)piperidine

deriv.)
IT 99960-12-0
(cyclocondensation of, with **carbon disulfide**)
IT 57-13-6, Urea, reactions **75-15-0, Carbon disulfide**, reactions 78-39-7
(cyclocondensation of, with pyrimidinediamine deriv.)

L37 ANSWER 9 OF 13 HCA COPYRIGHT 2003 ACS on STN
104:68861 (Piperidinylmethyl)- and (piperidinyloxy)benzimidazoles and -imidazopyridines. Janssens, Frans Eduard; Kennis, Ludo Edmond Josephine; Hens, Jozef Francis; Torremans, Joseph Leo G.; Diels, Gaston Stanislas M. (Janssen Pharmaceutica N. V., Belg.). Eur. Pat. Appl. EP 151826 A1 19850821, 140 pp. DESIGNATED STATES: R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE. (English). CODEN: EPXXDW. APPLICATION: EP 1984-201851 19841213. PRIORITY: US 1984-569369 19840109; US 1984-671135 19841113.
GI

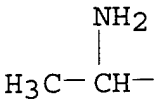


I

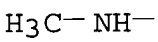


II

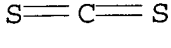
AB The title compds. I (Z-Z3 = CH, or one of Z-Z3 is N and the remainder are CH; Z4 = CH2, O, S, SO, SO2; R = alkyl, aryl-, heteroaryl-, acyl- hydroxy-, aryloxy, heteroaryloxy-, alkoxy-, arylthio-, carbonyl-, carboalkoxy-, cyano-, amino-, ureido-, thioureido-, or guanidinoalkyl, cycloalkyl, alkenyl, arylalkenyl; R1 = H, alkyl; R2 = H, alkyl, cycloalkyl, aryl, heteroaryl, aryl- or heteroarylalkyl), which were prepd., exhibited antihistaminic activity. Thus, a mixt. of 2-(4-MeC6H4CH2NH)C6H4NH2 and Et 1-benzyl-4-piperidineacetimidate hydrochloride in MeOH was refluxed and NH3 was added to give benzimidazole II.
IT **75-31-0**, reactions
(amidation by, of bromopropionyl chloride)
RN 75-31-0 HCA
CN 2-Propanamine (9CI) (CA INDEX NAME)



IT **124-40-3**, reactions
(condensation of, with urea deriv. and N-(aminoethyl)piperidine deriv.)
RN 124-40-3 HCA
CN Methanamine, N-methyl- (9CI) (CA INDEX NAME)



IT **75-15-0**, reactions
(cyclocondensation of, with pyrimidinediamine deriv.)
RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)

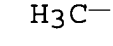


IT **75-21-8**, reactions
(N-alkylation by, of piperidine deriv.)
RN 75-21-8 HCA
CN Oxirane (9CI) (CA INDEX NAME)

IC ICM C07D471-04
ICS C07D401-06; C07D401-12; C07D401-14; C07D405-14; C07D409-14; C07D417-14; C07D513-04; C07D519-00; C07D487-04; C07D473-00
CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1, 27, 63
IT **75-31-0**, reactions
(amidation by, of bromopropionyl chloride)
IT 99959-94-1
(condensation of, with **carbon disulfide**)
IT **124-40-3**, reactions
(condensation of, with urea deriv. and N-(aminoethyl)piperidine deriv.)
IT 99960-12-0
(cyclocondensation of, with **carbon disulfide**)
IT 57-13-6, reactions **75-15-0**, reactions 78-39-7
(cyclocondensation of, with pyrimidinediamine deriv.)
IT **75-21-8**, reactions 100-69-6 107-14-2 144-48-9 1716-42-3 61380-07-2 62780-89-6 86487-54-9 86721-12-2 91125-08-5
(N-alkylation by, of piperidine deriv.)

L37 ANSWER 10 OF 13 HCA COPYRIGHT 2003 ACS on STN
103:215287 Five membered heterocyclic ring containing N-(bicyclic heterocyclyl)-4-piperidinamines. Janssens, Frans Eduard; Torremans, Joseph Leo Ghislanus; Hens, Jozef Francis; Van Offenwert, Theophilus Theresia (Janssen Pharmaceutica N. V., Belg.). Eur. Pat. Appl. EP 145037 A2 19850619, 76 pp. DESIGNATED STATES: R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE. (English). CODEN: EPXXDW. APPLICATION: EP 1984-201326 19840914. PRIORITY: US 1983-539597 19831006; US 1984-625343 19840627.
GI For diagram(s), see printed CA Issue.
AB The title compds. [I; R = H, alkyl; R1 = H, alkyl, thienyl, halothienyl, pyrazinyl, thiazolyl, alkylthiazolyl, imidazolyl, alkylimidazolyl, (un)substituted Ph, alkyl substituted by 1 or 2 of these arom. groups; R2 = H, alkyl, cycloalkyl, alkanoyl, alkoxycarbonyl, (un)substituted Ph; R3 = R4(CH2)nZZ1, R4(CH2)nZ2C(X1)ZZ1, Q; R4 = 5-membered heterocyclyl contg. .gtoreq.1 N atoms, optionally fused to a C6H6 ring; X = (un)substituted CH:CHCH:CH, N:CHCH:CH, CH:NCH:CH, CH:CHN:CH, CH:CHCH:N; X1 = O, S, O2NCH, R5N; R5 = H, alkyl, cyano, NO2, acyl; Z = O, S, R6 N, bond; R6 = H, alkyl, amino, acyl; Z1 = alkylene; Z2 = O, S, R7N, bond; R7 = H, alkyl; n = 0-6; m = 0-2] were prepd. Thus, N-(2-nitrophenyl)-2-furanmethanamine was hydrogenated and the diamine condensed with Et 4-isothiocyanato-1-piperidinecarboxylate to give thiourea deriv. II. This was cyclized to a benzimidazole deriv. by heating with HgO and S in EtOH, decarboxylated by heating in aq. HBr, and N-alkylated with 4-(chloromethyl)-5-methyl-1H-imidazole-HCl to give benzimidazolamine III. The antihistaminic properties of I were demonstrated in rats, where I inhibited the lethality of compd. 48/80 with ED50 0.005-1.25 mg/kg s.c. or orally, and inhibit gastric lesions in rats caused by the same agent with ED50 0.04-1.25 mg/kg s.c.
IT **75-21-8**, reactions
(aminolysis of, by benzimidazolamine derivs.)
RN 75-21-8 HCA
CN Oxirane (9CI) (CA INDEX NAME)

IT **74-89-5**, reactions
(condensation of, with Et isothiocyanate deriv.)
RN 74-89-5 HCA
CN Methanamine (9CI) (CA INDEX NAME)

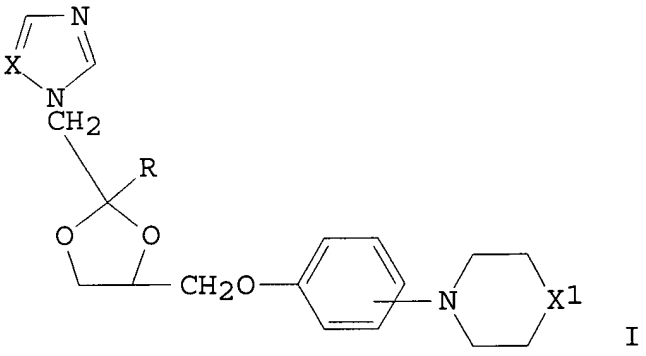


IT **75-15-0**, reactions
(condensation of, with aminopiperidinecarboxylate)
RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)

S=C=S

IC ICM C07D401-12
ICS C07D471-04; C07D409-12; C07D405-12; C07D405-14; C07D405-06; C07D409-06; C07D401-14; C07D417-14; C07D409-14; C07D413-14
CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1, 63
IT **75-21-8**, reactions
(aminolysis of, by benzimidazolamine derivs.)
IT **74-89-5**, reactions 689-98-5 99151-29-8
(condensation of, with Et isothiocyanate deriv.)
IT **75-15-0**, reactions
(condensation of, with aminopiperidinecarboxylate)
IT 58859-46-4
(condensation of, with **carbon disulfide**)

L37 ANSWER 11 OF 13 HCA COPYRIGHT 2003 ACS on STN
98:126107 1-(1,3-Dioxolan-2-ylmethyl)-1H-1,2,4-triazoles and compositions. Heeres, Jan; Backx, Leo J. J.; Mostmans, Joseph H. (Janssen Pharmaceutica N. V., USA). U.S. US 4358449 A 19821109, 22 pp. Cont. of U.S. Ser. No. 1,614, abandoned. (English). CODEN: USXXAM. APPLICATION: US 1980-351671 19800215. PRIORITY: US 1977-764263 19770131; US 1977-853728 19771121; US 1979-1614 19790108.
GI

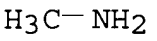


I

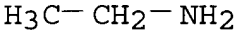
AB The bactericidal and fungicidal title compds. I [R = (un)substituted phenyl; X = CH, N; X1 = CH2, O, (un)substituted imino] and their pharmaceutic salts were prepd. Thus, acetylating 4-piperazinophenol-2HBr and then treating with cis-2-(2,4-dichlorophenyl)-2-(1H-imidazol-1-ylmethyl)-1,3-dioxolan-4-ylmethyl methanesulfonate followed by deacylation gave cis-I (R = 2,4-Cl2C6H4, X = CH, X1 = NH) (II). The ED50 of II against crop

candidosis in turkeys was 125 mg/kg of feed.
IT **75-21-8**, reactions
(reaction of, with [(dichlorophenyl)(imidazolylmethyl)dioxolanylmethoxyphenyl]piperazine)
RN 75-21-8 HCA
CN Oxirane (9CI) (CA INDEX NAME)

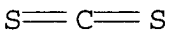
IT **74-89-5**, reactions **75-04-7**, reactions
(reaction of, with [(dichlorophenyl)(imidazolylmethyl)dioxolanylmethoxyphenyl]piperazineacetate)
RN 74-89-5 HCA
CN Methanamine (9CI) (CA INDEX NAME)



RN 75-04-7 HCA
CN Ethanamine (9CI) (CA INDEX NAME)



IT **75-15-0**, reactions
(reaction of, with [(dichlorophenyl)(imidazoylmethyl)dioxolanylmethoxyphenyl]piperazine)
RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)

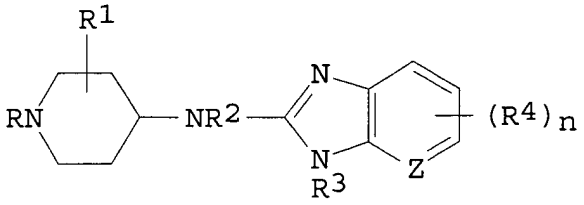


IC A61K031-535; A61K031-445; C07D413-14
NCL 424248580
CC 28-10 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1, 5
IT **75-21-8**, reactions
(reaction of, with [(dichlorophenyl)(imidazolylmethyl)dioxolanylmethoxyphenyl]piperazine)
IT **74-89-5**, reactions **75-04-7**, reactions
(reaction of, with [(dichlorophenyl)(imidazolylmethyl)dioxolanylmethoxyphenyl]piperazineacetate)
IT **75-15-0**, reactions 79-07-2 79-44-7 105-39-5 123-62-6
(reaction of, with [(dichlorophenyl)(imidazoylmethyl)dioxolanylmethoxyphenyl]piperazine)

L37 ANSWER 12 OF 13 HCA COPYRIGHT 2003 ACS on STN
94:30579 N-Heterocyclyl-4-piperidinamines. Janssens, Frans; Luyckx, Marcel; Stokbroekx, Raymond; Torremans, Joseph (Janssen

Pharmaceutica N. V., Belg.). U.S. US 4219559 19800826, 27 pp. Cont.-in-part of U.S. Ser. No. 892,534, abandoned. (English). CODEN: USXXAM. APPLICATION: US 1979-2276 19790110.

GI



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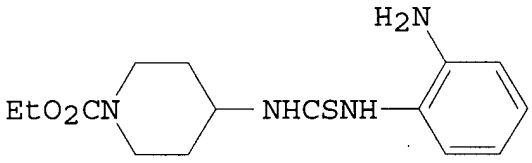


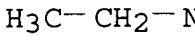
II

AB 1-(4-Piperidinyl)-3-(2-aminophenyl)thioureas and heteroarom. analogs underwent cyclocondensation to give title compds. I [R = alkyl, halo-, hydroxy-, cyano-, isothiocyanato-, alkoxy-, aryl-, heteroaryl-, aryloxy-, (heteroaryl)oxy-, arylthio-, (heteroaryl)thio-, arylsulfonyl-, (heteroaryl)sulfonyl-, or aminoalkyl, alkenyl, aryl- or (heteroaryl)alkenyl, cycloalkyl, cyanocycloalkyl, aryl- or (heteroaryl)cycloalkyl, a 1H-benzimidazol-2-yl group, R5CmH2m [m = 1-6; R5 = a 4,5-dihydro-5-oxo-1H-tetrazol-1-yl group, 2,3-dihydro-1,4-benzodioxin-6-yl, 2,3-dihydro-2-oxo-1H-benzimidazol-1-yl, 2,3-dihydro-3-oxo-4H-1,4-benzoxazin-4-yl, (10,11-dihydro-5H-dibenzo[a,d]cyclohepten-5-ylidene)methyl, 4-morpholinyl, 1-piperidinyl, 1-pyrrolidinyl, mono- or disubstituted amino]; R1 = H, alkyl; R2 = H, alkyl, cycloalkyl, aryl- or (heteroaryl)alkyl, alkanoyl; R3 = H, alkyl, aryl- or (heteroaryl)cycloalkyl, aryl- or (heteroaryl)alkyl, diaryl- or bis(heteroaryl)alkyl; Z = CH, N; n = 0, 1, 2; R4 = halo, alkyl, alkoxy, CF3], useful as antihistaminics (no data). A mixt. of thiourea II and MeI in EtOH was refluxed 8 h to yield I (R = CO2Et, Z = CH, n = 0, R1 = R2 = R3 = H), the latter was converted to the resp. I (R = H), and the product was N-alkylated to give I (R = PhCH2CH2, Z = CH, n = 0, R1 = R2 = R3 = H).

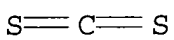
IT **75-04-7**, reactions
(amidation of [(piperidinoethyl)phenoxy]acetate ester by)

RN 75-04-7 HCA

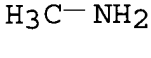
CN Ethanamine (9CI) (CA INDEX NAME)



IT **75-15-0**, reactions
(condensation reaction of, with piperidinamine deriv.)
RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)

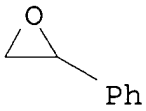


IT **74-89-5**, reactions
(reductive amination of piperidinone deriv. by)
RN 74-89-5 HCA
CN Methanamine (9CI) (CA INDEX NAME)



IT **75-21-8**, reactions **96-09-3**
(N-alkylation of piperidine deriv. by)
RN 75-21-8 HCA
CN Oxirane (9CI) (CA INDEX NAME)

RN 96-09-3 HCA
CN Oxirane, phenyl- (9CI) (CA INDEX NAME)



IC A61K031-445; C07D401-04
NCL 424267000
CC 27-17 (Heterocyclic Compounds (One Hetero Atom))
Section cross-reference(s): 28
IT **75-04-7**, reactions 7664-41-7, reactions
(amidation of [(piperidinoethyl)phenoxy]acetate ester by)
IT 58859-46-4
(condensation reaction of, with **carbon disulfide**)
IT **75-15-0**, reactions
(condensation reaction of, with piperidinamine deriv.)
IT **74-89-5**, reactions
(reductive amination of piperidinone deriv. by)
IT **75-21-8**, reactions **96-09-3** 100-43-6 107-13-1,

reactions 2210-74-4 19152-55-7 53828-22-1
(N-alkylation of piperidine deriv. by)

L37 ANSWER 13 OF 13 HCA COPYRIGHT 2003 ACS on STN
85:177356 Spiro[piperidine-4,6'-thiazolo[3,2-a]pyrimidines]. Thymoanaleptics and blood platelet aggregation inhibitors.
Szarvasi, Etienne; Festal, Didier; Grand, Marcel; Depin, Jean C.; Chabert, Janine (Soc. LIPHA, Lyons, Fr.). European Journal of Medicinal Chemistry, 11(2), 115-24 (French) 1976. CODEN: EJMCA5. ISSN: 0223-5234.

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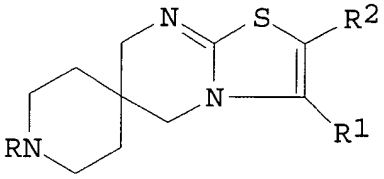

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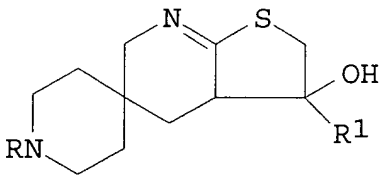
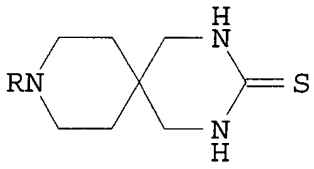


II



III

AB Spiropiperidinethiazolopyrimidines I (R = Bu, octyl, CH2Ph; R1 = Ph, 4-FC6H4, 2-MeOC6H4, 2-naphthyl, 2,5-(MeO)2CH3, 2-furyl, 2-thienyl, 3,4-Cl2C6H3, R2 = H; R = Bu, R1 = Ph, R2 = Me, Ph) and II (R = Bu, octyl, decyl, cyclohexyl, CH2Ph, 1-naphthylmethyl, 3,4-(MeO)2C6H3CH2, 3,4-Cl2C6H3CH2; R1 = Ph, 2-naphthyl, 2,5-(MeO)2C6H3, 2-MeOC6H4, 3,4-Cl2C6H3, 4-PhC6H4, 4-O2NC6H4) were prepd. by treating thiones III with R1COCHR2Br. III were obtained from diethanolamine in 5 steps. II (R = arom., R1 = 3,4-Cl2C6H3, R2 = H) are antidepressants, and I (R = aliph., 2,5-(MeO)2C6H3) are platelet aggregation inhibitors.

IT **75-21-8**, reactions
(reaction of, with amines)

RN 75-21-8 HCA

CN Oxirane (9CI) (CA INDEX NAME)

IT **75-15-0**, reactions
(reaction of, with bis(aminomethyl)piperidines)

RN 75-15-0 HCA

CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)

S=C=S

IT **111-86-4**
(reaction of, with ethylene oxide)
RN 111-86-4 HCA
CN 1-Octanamine (9CI) (CA INDEX NAME)

$H_2N-(CH_2)_7-Me$

CC 28-17 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1
ST spiropiperidinethiazolpyrimidine; piperidine spirothiazolopyrimidine; thiazolopyrimidine spiropiperidine; spiropiperidinepyrimidinethione halo ketone condensation; aminomethylpiperidine **carbon disulfide** cyclization
IT 52419-82-6P 52419-85-9P 52488-16-1P 60855-95-0P 60855-96-1P 60855-97-2P 60855-98-3P 60855-99-4P 60856-00-0P 60856-01-1P 60856-02-2P 60856-03-3P
(prepn. and reaction of, with **carbon disulfide**)
IT **75-21-8**, reactions
(reaction of, with amines)
IT **75-15-0**, reactions
(reaction of, with bis(aminomethyl)piperidines)
IT 108-91-8 **111-86-4**
(reaction of, with ethylene oxide)

=> d l38 1-20 ti

L38 ANSWER 1 OF 20 HCA COPYRIGHT 2003 ACS on STN
TI Non-toxic corrosion protection pigments based on cobalt

L38 ANSWER 2 OF 20 HCA COPYRIGHT 2003 ACS on STN
TI Curable **epoxy** compositions for antislip neat coating with good curability and proper pot life at low temperature, and their cured products

L38 ANSWER 3 OF 20 HCA COPYRIGHT 2003 ACS on STN
TI Storage-stable low-temperature-curable resin compositions

L38 ANSWER 4 OF 20 HCA COPYRIGHT 2003 ACS on STN
TI **Anticorrosive** coating compositions containing **polyepoxy** compounds with good curability and handling

L38 ANSWER 5 OF 20 HCA COPYRIGHT 2003 ACS on STN
TI **Lubricating** compositions

L38 ANSWER 6 OF 20 HCA COPYRIGHT 2003 ACS on STN
TI Metal overbased fatty **amines** further derivatized to contain covalently bound sulfur and/or phosphorus useful as **antiwear**/extreme pressure additives

L38 ANSWER 7 OF 20 HCA COPYRIGHT 2003 ACS on STN
TI Dithiocarbamoyl diols and borate esters thereof for use in **lubricant** compositions

L38 ANSWER 8 OF 20 HCA COPYRIGHT 2003 ACS on STN
TI Low-sulfur diesel fuels containing organometallic complexes

L38 ANSWER 9 OF 20 HCA COPYRIGHT 2003 ACS on STN
TI Diesel fuels containing organometallic complexes

L38 ANSWER 10 OF 20 HCA COPYRIGHT 2003 ACS on STN
TI Organometallic complex-**antioxidant** combinations, and concentrates and diesel fuels containing them

L38 ANSWER 11 OF 20 HCA COPYRIGHT 2003 ACS on STN
TI Organophosphoryl borates and **lubricants** and aqueous fluids containing them

L38 ANSWER 12 OF 20 HCA COPYRIGHT 2003 ACS on STN
TI Low-sulfur diesel fuels containing organometallic complexes

L38 ANSWER 13 OF 20 HCA COPYRIGHT 2003 ACS on STN
TI Thermally stable compositions and **lubricants** and functional fluids containing them

L38 ANSWER 14 OF 20 HCA COPYRIGHT 2003 ACS on STN
TI Borated hydroxyalkyl esters of dithiocarbamic acids as multifunctional additives for **lubricant** compositions

L38 ANSWER 15 OF 20 HCA COPYRIGHT 2003 ACS on STN
TI Performance-oriented packaging standards; changes to classification, hazard communication, packaging and handling requirements based on UN standards and agency initiative

L38 ANSWER 16 OF 20 HCA COPYRIGHT 2003 ACS on STN
TI Compositions and **lubricants** and functional fluids containing same

L38 ANSWER 17 OF 20 HCA COPYRIGHT 2003 ACS on STN
TI Phosphite ester compositions, and **lubricants** and functional fluids containing same as extreme-pressure and/or friction-modifying additives

L38 ANSWER 18 OF 20 HCA COPYRIGHT 2003 ACS on STN
TI 2-(Piperidin-4-yl)ethyl compounds as light stabilizers for polymers

L38 ANSWER 19 OF 20 HCA COPYRIGHT 2003 ACS on STN

TI **Lubricating** oil load-carrying additives

L38 ANSWER 20 OF 20 HCA COPYRIGHT 2003 ACS on STN
TI Ternary aqueous systems

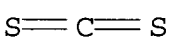
=> d l38 1,5,6,7,13,16,17,19 cbib abs hitstr hitind

L38 ANSWER 1 OF 20 HCA COPYRIGHT 2003 ACS on STN
139:118795 Non-toxic corrosion protection pigments based on cobalt. Sturgill, Jeffrey Allen; Phelps, Andrew Wells; Swartzbaugh, Joseph Thomas (University of Dayton, USA). PCT Int. Appl. WO 2003060019 A1 20030724, 393 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2002-US40084 20021216. PRIORITY: US 2002-37576 20020104.

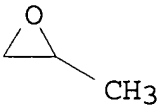
AB Corrosion-inhibiting cobalt-based pigments contain a trivalent or tetravalent cobalt/valence stabilizer complex. An inorg. or org. material is used to stabilize the trivalent or tetravalent cobalt ion to form a compd. that is sparingly sol. in water. Specific stabilizers are chosen to control the release rate of trivalent or tetravalent cobalt during exposure to water and to tailor the compatibility of the powder when used as a pigment in a chosen binder system. Stabilizers may also modify the processing and handling characteristics of the formed powders. Cobalt/valence stabilizer combinations are chosen based on the well-founded principles of cobalt coordination chem. Many cobalt-valence stabilizer combinations are presented that can equal the performance of conventional hexavalent chromium systems.

IT **75-15-0**, **Carbon disulfide**, uses
75-56-9, Propylene oxide, uses **107-10-8**, Propyl amine, uses **109-89-7**, Diethyl amine, uses
(org. solvent; manuf. of non-toxic corrosion protection pigments based on cobalt)

RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)



RN 75-56-9 HCA
CN Oxirane, methyl- (9CI) (CA INDEX NAME)



RN 107-10-8 HCA
CN 1-Propanamine (9CI) (CA INDEX NAME)

$H_3C-CH_2-CH_2-NH_2$

RN 109-89-7 HCA
CN Ethanamine, N-ethyl- (9CI) (CA INDEX NAME)

$H_3C-CH_2-NH-CH_2-CH_3$

IC ICM C09D005-08
ICS C09C001-62; C23F011-18
CC 42-6 (Coatings, Inks, and Related Products)
Section cross-reference(s): 56, 78
IT Coating materials
(**anticorrosive**; manuf. of non-toxic corrosion protection pigments based on cobalt)
IT 56-23-5, Carbon tetrachloride, uses 56-81-5, Glycerol, uses 57-55-6, Propylene glycol, uses 60-29-7, Diethyl ether, uses 62-53-3, Aniline, uses 64-17-5, Ethanol, uses 64-19-7, Acetic acid, uses 67-56-1, Methanol, uses 67-63-0, Isopropanol, uses 67-64-1, Acetone, uses 67-66-3, Chloroform, uses 67-68-5, Dimethyl sulfoxide, uses 68-12-2, Dimethylformamide, uses 71-23-8, n-Propanol, uses 71-36-3, n-Butanol, uses 71-43-2, Benzene, uses 75-05-8, Acetonitrile, uses 75-09-2, Methylene chloride, uses **75-15-0**, **Carbon disulfide** , uses **75-56-9**, Propylene oxide, uses 76-13-1, Freon 113 78-83-1, Isobutanol, uses 78-92-2, sec-Butanol 78-93-3, Methyl ethyl ketone, uses 79-01-6, Trichloroethylene, uses 79-09-4, Propionic acid, uses 79-20-9, Methyl acetate 96-22-0, Diethyl ketone 96-48-0, Butyrolactone 96-49-1, Ethylene carbonate 97-64-3, Ethyl lactate 98-86-2, Acetophenone, uses 98-95-3, Nitrobenzene, uses 100-51-6, Benzyl alcohol, uses 100-52-7, Benzaldehyde, uses 105-37-3, Ethyl propionate 105-54-4, Ethyl butyrate **107-10-8**, Propyl amine, uses 107-12-0, Propionitrile 107-21-1, Ethylene glycol, uses 107-31-3, Methyl formate 108-10-1, Methyl isobutyl ketone 108-20-3, Isopropyl ether 108-32-7, Propylene carbonate 108-88-3, Toluene, uses 108-90-7, Chlorobenzene, uses 108-93-0, Cyclohexanol, uses 108-94-1, Cyclohexanone, uses 109-86-4, Methyl Cellosolve **109-89-7**, Diethyl amine, uses 109-94-4, Ethyl formate 109-99-9, Tetrahydrofuran, uses 110-00-9, Furan 110-54-3, Hexane, uses 110-80-5, Cellosolve 110-82-7, Cyclohexane, uses

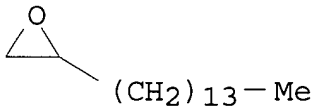
110-86-1, Pyridine, uses 111-65-9, Octane, uses 111-84-2, Nonane 112-34-5, Butyl Carbitol 112-40-3, Dodecane 123-91-1, Dioxane, uses 124-18-5, Decane 141-43-5, Ethanolamine, uses 141-78-6, Ethyl acetate, uses 142-68-7, Tetrahydropyran 142-82-5, Heptane, uses 554-12-1, Methyl propionate 623-42-7, Methyl butyrate 680-31-9, Hexamethylphosphoric triamide, uses 1120-21-4, Undecane 1300-21-6, Dichloroethane 1319-77-3, Cresol 1330-20-7, Xylene, uses 25323-89-1, Trichloroethane
(org. solvent; manuf. of non-toxic corrosion protection pigments based on cobalt)

L38 ANSWER 5 OF 20 HCA COPYRIGHT 2003 ACS on STN
132:95571 **Lubricating** compositions. Stachew, Carl F.; Abraham, William D.; Supp, James A.; Shanklin, James R.; Lamb, Gordon David (The Lubrizol Corporation, USA). Eur. Pat. Appl. EP 972820 A1 20000119, 19 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1999-305655 19990716. PRIORITY: US 1998-118280 19980717.

AB Disclosed is a **lubricating** compn. having a major amt. of an oil of **lubrication** viscosity and a minor amt. of (A) at least one thiocarbamate wherein the improvement comprises adding to said thiocarbamate (B) a sludge preventing and seal protecting amt. of at least one arom. aldehyde or an **epoxide** having at least one oxirane group or mixts. thereof.

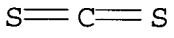
IT **7320-37-8**, Hexadecylene oxide
(**lubricating** compns. for reducing sludge and degrdn. of elastomeric seals)

RN 7320-37-8 HCA
CN Oxirane, tetradecyl- (9CI) (CA INDEX NAME)



IT **75-15-0**, **Carbon disulfide**, reactions
109-89-7, **Diethylamine**, reactions **111-92-2**, **Dibutylamine 2050-92-2**, **Diamylamine**
(**lubricating** compns. for reducing sludge and degrdn. of elastomeric seals)

RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)



RN 109-89-7 HCA
CN Ethanamine, N-ethyl- (9CI) (CA INDEX NAME)

$H_3C-CH_2-NH-CH_2-CH_3$

RN 111-92-2 HCA
CN 1-Butanamine, N-butyl- (9CI) (CA INDEX NAME)

n-Bu-NH-Bu-n

RN 2050-92-2 HCA
CN 1-Pentanamine, N-pentyl- (9CI) (CA INDEX NAME)

$Me-(CH_2)_4-NH-(CH_2)_4-Me$

IC ICM C10M141-08
ICI C10M141-08, C10M129-18, C10M129-24, C10M135-18; C10N040-25
CC 51-8 (Fossil Fuels, Derivatives, and Related Products)
ST **lubricating** compn thiocarbamate
IT Seals (parts)
(elastomeric; **lubricating** compns. for reducing sludge and degrdn. of elastomeric seals)
IT **Lubricating** oils
(**lubricating** compns. for reducing sludge and degrdn. of elastomeric seals)
IT Rubber, miscellaneous
(**lubricating** compns. for reducing sludge and degrdn. of elastomeric seals)
IT 90-02-8, Salicylaldehyde, uses 121-33-5, Vanillin 148-53-8, o-Vanillin **7320-37-8**, Hexadecylene oxide 19045-66-0D, Thiocarbamic acid, derivs. 37942-07-7, 3,5-Di-tert-butylsalicylaldehyde
(**lubricating** compns. for reducing sludge and degrdn. of elastomeric seals)
IT 64-17-5, Ethanol, reactions **75-15-0**, **Carbon disulfide**, reactions 79-06-1, Acrylamide, reactions 96-33-3, Methylacrylate 107-02-8, Acrolein, reactions 108-88-3, Toluene, reactions **109-89-7**, **Diethylamine**, reactions **111-92-2**, **Dibutylamine** 818-61-1, 2-Hydroxyethyl acrylate **2050-92-2**, **Diamylamine**
(**lubricating** compns. for reducing sludge and degrdn. of elastomeric seals)

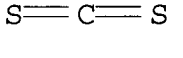
L38 ANSWER 6 OF 20 HCA COPYRIGHT 2003 ACS on STN
132:24685 Metal overbased fatty **amines** further derivatized to contain covalently bound sulfur and/or phosphorus useful as **antiwear**/extreme pressure additives. Huang, Nai Z. (Lubrizol Corp., USA). U.S. US 6001782 A 19991214, 12 pp. (English). CODEN: USXXAM. APPLICATION: US 1998-213543 19981217.
AB An **antiwear**/extreme pressure compn. is disclosed that comprises a metal overbased **amine** of the structure

R1R2NH(MA)x, wherein R1 and R2 are each independently hydrogen, or a hydrocarbyl group, **amino**-substituted hydrocarbyl group, hydroxy-substituted hydrocarbyl group, alkoxy-substituted hydrocarbyl group or **amino** groups wherein the hydrocarbyl group contains from 4 to 50 carbon atoms, provided that R and R-are not both hydrogen, M is a metal, A is carbonate, sulfite, sulfate, thiosulfate, phosphite, phosphate, or mixts. thereof, and x has a value of from 1.1 to 40; wherein said metal overbased **amine** is reacted with **carbon disulfide** to form a sulfur deriv. of a metal overbased **amine**, an **epoxide** followed by phosphorus pentoxide to form a phosphorus deriv. of a metal overbased **amine** or wherein the sulfur deriv. is further reacted with an **epoxide** followed by phosphorus pentoxide to form a sulfur and phosphorus deriv. of a metal overbased **amine**. A process for prepg. **antiwear**/extreme pressure derivs. of overbased **amines** is also disclosed.

IT **75-15-0**, **Carbon disulfide**, reactions
(metal overbased fatty **amines** further derivatized to contain covalently bound sulfur and/or phosphorus useful as **antiwear**/extreme pressure additives)

RN 75-15-0 HCA

CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)



IC ICM C10M137-06
ICS C10M135-18

NCL 508420000

CC 51-8 (Fossil Fuels, Derivatives, and Related Products)

ST **antiwear** extreme pressure additive **lubricating** oil

IT **Lubricating** oil additives
(**antiwear**-extreme pressure; metal overbased fatty **amines** further derivatized to contain covalently bound sulfur and/or phosphorus useful as **antiwear**/extreme pressure additives)

IT 71-41-0, Amyl alcohol, reactions **75-15-0**, **Carbon disulfide**, reactions 78-83-1, Isobutyl alcohol, reactions 96-33-3, Methyl acrylate 108-30-5D, Succinic anhydride, isobutylene derivs. 108-95-2D, Phenol, propylene tetramer-substituted, reactions 124-38-9, Carbon dioxide, reactions 1310-65-2, Lithium hydroxide 1310-73-2, Sodium hydroxide, reactions 1314-56-3, Phosphorus pentoxide, reactions 7173-62-8, N-Oleyl-1,3-**diaminopropane** 7173-62-8D, N-Oleyl-1,3-**diaminopropane**, sodium carbonate overbased 7439-93-2, Lithium, reactions 7439-95-4, Magnesium, reactions 7440-09-7, Potassium, reactions 7440-23-5, Sodium, reactions 7440-70-2, Calcium, reactions 10043-52-4, Calcium chloride, reactions 26249-20-7, Butylene oxide 26545-55-1D, **Diaminopropane**, tallow derivs. 26997-02-4D, Heptyl phenol,

methylene-coupled, calcium salt
(metal overbased fatty **amines** further derivatized to contain covalently bound sulfur and/or phosphorus useful as **antiwear**/extreme pressure additives)

L38 ANSWER 7 OF 20 HCA COPYRIGHT 2003 ACS on STN
125:333865 Dithiocarbamoyl diols and borate esters thereof for use in **lubricant** compositions. Chiu, I-ching (Pennzoil Products Company, USA). U.S. US 5560853 A 19961001, 8 pp., Cont. of U.S. Ser. No. 574,714, abandoned. (English). CODEN: USXXAM. APPLICATION: US 1992-851265 19920313. PRIORITY: US 1990-574714 19900830.

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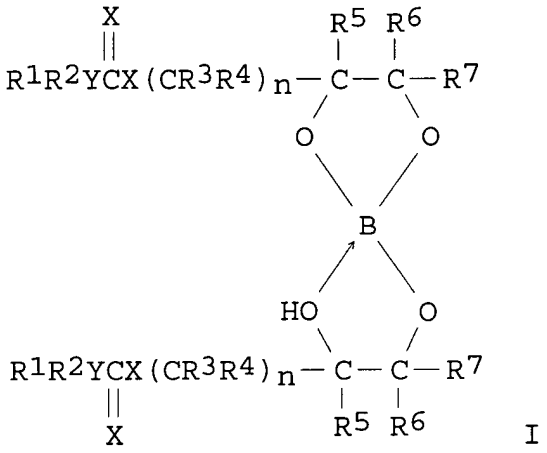
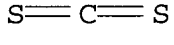


I

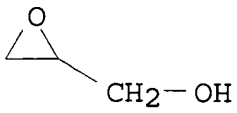
AB A borate ester having the formula I or [(R1R2)Y(C:X)X(CR3R4)nCHR5CR6R7O]3B, wherein Y is N, S or O; X is O or S; R1 and R2 are, independent of one another, selected from the group consisting of H, C1-40 hydrocarbon residues and C3-50 cycloalkyl, aryl and aralkyl, each of which may further contain N, O or S; R3, R4, R5, R6 and R7 are independent of one another, selected from the group consisting of H and C1-8 hydrocarbon residues, and n = 0-4. An **antiwear/antioxidant/antifriction/antirust** additive comprises the borate ester of the invention when added to a **lubricating** oil.

IT **75-15-0**, **Carbon disulfide**, reactions
556-52-5, Oxiranemethanol
(in prepn. of dithiocarbamoyl diol borate esters for use in **lubricant** compns.)

RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)



RN 556-52-5 HCA
CN Oxiranemethanol (9CI) (CA INDEX NAME)



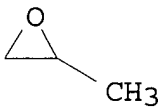
IC ICM C10M139-00
ICS C10M135-18
NCL 508143000
CC 51-8 (Fossil Fuels, Derivatives, and Related Products)
ST dithiocarbamoyl diol borate ester **lubricating** oil; **lubricant** dithiocarbamoyl diol borate multifunctional additive
IT **Lubricating** oil additives
(**antifriction-antioxidants-antiwear** -rust inhibitors; prepn. of dithiocarbamoyl diol borate esters as multifunctional additives for **engine oils**)
IT **75-15-0**, **Carbon disulfide**, reactions
96-24-2, 3-Chloro-1,2-propanediol 106-20-7, Bis(2-ethylhexyl) **amine** 106-89-8, reactions 112-90-3, Oleyl **amine** **556-52-5**, Oxiranemethanol 1120-48-5, **Dioctylamine**
(in prepn. of dithiocarbamoyl diol borate esters for use in **lubricant** compns.)
IT 183503-84-6P
(intermediate; in prepn. of dithiocarbamoyl diol borate esters for use in **lubricant** compns.)
IT 183503-88-0
(intermediate; in prepn. of dithiocarbamoyl diol borate esters for use in **lubricant** compns.)
IT 183503-85-7P
(multifunctional additive; prepn. of dithiocarbamoyl diol borate esters for use in **lubricant** compns.)
IT 7440-50-8DP, Copper, complexes with 3-Bis(2-ethylhexyl)dithiocarbamoyl-1,2-propanediol borate ester 183503-85-7DP, copper complexes 183503-86-8P 183503-87-9P 183503-89-1P
(prepn. of dithiocarbamoyl diol borate esters for use in **lubricant** compns.)

L38 ANSWER 13 OF 20 HCA COPYRIGHT 2003 ACS on STN
118:257909 Thermally stable compositions and **lubricants** and functional fluids containing them. Vinci, James N.; Adams, Paul E. (Lubrizol Corp., USA). PCT Int. Appl. WO 9219703 A1 19921112, 69 pp. DESIGNATED STATES: W: AU, BR, CA, FI, JP, NO; RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1992-US2824 19920407. PRIORITY: US 1991-694186 19910501.
AB A compn. comprises (A) >1 basic alkali or alk. earth metal salts of an org. acid compd., (B) >1 metal deactivators other than

dimercaptothiadiazole or its derivs., and (C) >1 hydrocarbyl phosphites, where the ratio of the equivs. of (A) based on the total base no. to the equivs. of (C) based on P atoms is >1, provided that the compn. is free of Zn dithiophosphate and that when (A) is an overbased Mg salicylate then the compn. contains (D) .ltorsim.0.40 wt.% of a S-, P- or S- and P-contg. **antiwear** agent. These compns. are useful as additives for **lubricants** and functional **fluids**, esp. **hydraulic fluids**, **gear oils**, **greases**, etc. The **lubricants** and fluids having this particular combination of components have improved stability and do not contain Zn dithiophosphate. These **lubricants** and fluids are also not corrosive to the hydraulic system components.

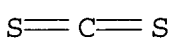
IT **75-56-9D**, reaction products with isobutyl-amyl dithiophosphate and Me acrylate
(additives contg., for **lubricants** and functional fluids, zinc dithiophosphate-free)

RN 75-56-9 HCA
CN Oxirane, methyl- (9CI) (CA INDEX NAME)



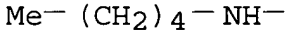
IT **75-15-0D**, **Carbon disulfide**, reaction products with amines and unsatd. amides or esters **109-89-7D**, Diethylamine, reaction products with **carbon disulfide** and Me acrylate **2050-92-2D**, Diamylamine, reaction products with **carbon disulfide** and acrylamide
(**antiwear** additives contg., for **lubricants** and functional fluids, zinc dithiophosphate-free)

RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)



RN 109-89-7 HCA
CN Ethanamine, N-ethyl- (9CI) (CA INDEX NAME)

RN 2050-92-2 HCA
CN 1-Pentanamine, N-pentyl- (9CI) (CA INDEX NAME)



IC ICM C10M163-00
ICS C10M141-10
CC 51-8 (Fossil Fuels, Derivatives, and Related Products)
ST **lubricating** oil thermally stable; **grease lubricating** thermally stable; **gear oil** compn thermally stable; **hydraulic fluid** compn thermally stable
IT **Hydraulic fluids**
(additives for, zinc dithiophosphate-free)
IT Fatty acids, esters
(esters, sulfurized, additives contg., for **lubricants** and functional fluids, zinc dithiophosphate-free)
IT **Lubricating oils**
(**gear oils**, compns. of, zinc dithiophosphate-free)
IT **Lubricating grease** additives
Lubricating oil additives
(multifunctional, compns. of, zinc dithiophosphate-free)
IT Terpenes and Terpenoids, uses
(sulfides, additives contg., for **lubricants** and functional fluids, zinc dithiophosphate-free)
IT Soybean oil
(sulfurized, **antiwear** agents, additives contg., for **lubricants** and functional fluids, zinc dithiophosphate-free)
IT Sulfides, uses
(terpenoid, additives contg., for **lubricants** and functional fluids, zinc dithiophosphate-free)
IT 69-72-7D, Salicylic acid, alkali and alk. earth metal salts, basic **75-56-9D**, reaction products with isobutyl-amyl dithiophosphate and Me acrylate 101-02-0, Triphenyl phosphite 102-85-2, Tributyl phosphite 108-95-2D, Phenol, alkali and alk. earth metal salts, basic 110-15-6D, Succinic acid, tetrapropenyl derivs., reaction products with propylene oxide 128-39-2, 2,6-Di-tert-butylphenol 150-11-8D, reaction products with methylacrylate 1095-04-1, Triphenyl trithiophosphite 1809-14-9, Dioctyl phosphite 3028-88-4, Trioctyl phosphite 3658-48-8, Di-2-ethylhexyl phosphite 4712-55-4, Diphenyl phosphite 18917-89-0D, Magnesium salicylate, basic 19475-46-8D, reaction products with methylacrylate and propylene oxide
(additives contg., for **lubricants** and functional fluids, zinc dithiophosphate-free)
IT 50-00-0D, Formaldehyde, reaction products with dialkyl dithiophosphates and acrylamide **75-15-0D**, **Carbon disulfide**, reaction products with amines and unsatd. amides or esters 78-79-5D, Isoprene, Diels-Alder adducts with Bu acrylate, sulfurized 79-06-1D, 2-Propenamide, reaction products with dialkyl dithiophosphates and/or formaldehyde 96-33-3D, reaction products with **carbon disulfide** and diethylamine 101-02-0D, Triphenylphosphite, sulfurized 106-99-0D, 1,3-Butadiene, Diels-Alder adducts with Bu acrylate, sulfurized **109-89-7D**, Diethylamine, reaction products with

carbon disulfide and Me acrylate 115-11-7D, Isobutene, sulfurized 141-32-2D, Diels-Alder reaction products with isoprene or butadiene, sulfurized 1330-78-5, Tricresyl phosphate **2050-92-2D**, Diamylamine, reaction products with **carbon disulfide** and acrylamide 6028-47-3D, reaction products with acrylamide 10025-67-9D, Sulfur monochloride, reaction products with isobutylene 10254-57-6 26999-29-1D, reaction products with acrylamide and formaldehyde
(**antiwear** additives contg., for **lubricants** and functional fluids, zinc dithiophosphate-free)

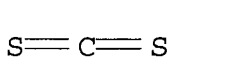
IT 95-14-7, 1H-Benzotriazole 21252-69-7 29385-43-1, Tolyltriazole
(metal deactivator, additives contg., for **lubricants** and functional fluids, zinc dithiophosphate-free)

L38 ANSWER 16 OF 20 HCA COPYRIGHT 2003 ACS on STN
111:100179 Compositions and **lubricants** and functional fluids containing same. Adams, Paul E.; Vinci, James Noel (Lubrizol Corp., USA). PCT Int. Appl. WO 8904358 A2 19890518, 121 pp. DESIGNATED STATES: W: AU, BR, DK, FI, JP, NO; RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1988-US3723 19881021. PRIORITY: US 1987-117254 19871105.

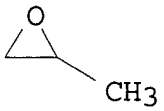
AB A compn., useful as additives for **lubricants** and functional **fluids**, esp. **hydraulic fluids**, **gear oils**, **greases**, etc., comprises (a) >1 neutral or basic metal salt or B-contg. neutral or basic metal salt of >1 acidic org. compds., the metal in the salt being selected from alkali metals, alk. earth metals, Zn, Cu, Al or a mixt. of .gtoreq.2 of the metals; (b) >1 metal deactivators; and (c) >1 compds. selected from (C-1) P-contg. amide, (C-2) P-contg. ester, (C-3) S-coupled dithiocarbamate, (C-4) S-contg. compd. of general formula G1(CR1R2)Sx(CR3R4)G2, where R1,R2,R3 and R4 are each independently H or hydrocarbyl groups; R1 and/or R3 may be G1 or G2; R1 and R2 and/or R3 and R4 together may be C4-7 alkylene groups, G1 and G2 are each independently CXR, CO2R, CN, R5CNR6, CON(R)2 or NO2, and G1 also may be CH2OH, where X = O or S, each of R and R5 are independently H or a hydrocarbyl group, R6 is H or a hydrocarbyl group; when both G1 and G2 are R5CNR6, the 2 R6 groups together may be a hydrocarbylene group linking the 2 N atoms; when G1 = CH2OH and G2 = COOR, a lactone may be formed by intramol. condensation of G1 and G2; and x = 1-8 integers, and (C-5) mixt. of .gtoreq.2 of (C-1) to (C-4). An example of the S-contg. compd. is prepd. from S2Cl2 and isobutyraldehyde.

IT **75-15-0D**, **Carbon disulfide**, reaction products with butylamine and Me acrylate **75-56-9D**, Propylene oxide, reaction products with dialkyl phosphorodithioic acid and Me acrylate **109-73-9D**, Butylamine, reaction products with **carbon disulfide** and Me acrylate **2050-92-2D**, Diamylamine, reaction products with **carbon disulfide**, sodium hydroxide and methylene chloride
(**antiwear** agents, for **lubricants** and functional fluids)

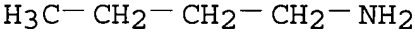
RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)



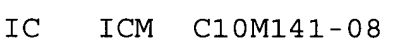
RN 75-56-9 HCA
CN Oxirane, methyl- (9CI) (CA INDEX NAME)



RN 109-73-9 HCA
CN 1-Butanamine (9CI) (CA INDEX NAME)



RN 2050-92-2 HCA
CN 1-Pentanamine, N-pentyl- (9CI) (CA INDEX NAME)



IC ICM C10M141-08
ICS C10M141-10; C10M163-00
CC 51-8 (Fossil Fuels, Derivatives, and Related Products)
ST **lubricant** additive sulfur monochloride isobutyraldehyde; **antiwear hydraulic fluid** compn additive; **gear oil** compn additive
IT **Hydraulic fluids**
(**antiwear** additives for, sulfur-contg. compds. as)
IT **Lubricating grease** additives
Lubricating oil additives
(**antiwear**, sulfur-contg. compds.)
IT 50-00-0D, Formaldehyde, reaction products with diisooctyl phosphorodithioic acid and acrylamide 75-09-2D, Methylene chloride, reaction products with diamylamine, **carbon disulfide** and sodium hydroxide **75-15-0D**, **Carbon disulfide**, reaction products with butylamine and Me acrylate **75-56-9D**, Propylene oxide, reaction products with dialkyl phosphorodithioic acid and Me acrylate 78-84-2D, Isobutyraldehyde, reaction products with isobutyraldehyde 79-06-1D, Acrylamide, reaction products with diisooctyl phosphorodithioic acid and formaldehyde 96-33-3D, Methyl acrylate, reaction products with dialkyl phosphorodithioic acid and propylene oxide **109-73-9D**, Butylamine, reaction products with **carbon disulfide** and Me acrylate 1310-73-2D, Sodium hydroxide, reaction products with diamylamine,

carbon disulfide and methylene chloride
2050-92-2D, Diamylamine, reaction products with **carbon disulfide**, sodium hydroxide and methylene chloride 10025-67-9D, Sulfur monochloride, reaction products with isobutyraldehyde 15834-33-0D, Phosphorodithioic acid, isobutyl-amyl esters, reaction products with Me acrylate and propylene oxide 26999-29-1D, reaction products with acrylamide and formaldehyde
(**antiwear** agents, for **lubricants** and functional fluids)

IT 69-72-7D, Salicylic acid, magnesium salts 108-95-2D, Phenol, calcium salts
(detergents, for **lubricants** and functional fluids)

IT 7704-34-9
(**lubricating grease** additives, **antiwear**, sulfur-contg. compds.)

IT 95-14-7, Benzotriazole 37306-44-8D, Triazole, alkylated
(metal deactivator, for **lubricants** and functional fluids)

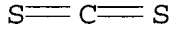
L38 ANSWER 17 OF 20 HCA COPYRIGHT 2003 ACS on STN
109:233982 Phosphite ester compositions, and **lubricants** and functional fluids containing same as extreme-pressure and/or friction-modifying additives. Scharf, Curtis R.; Di Biase, Stephen A.; Tritt, William C. (Lubrizol Corp., USA). PCT Int. Appl. WO 8804313 A2 19880616, 104 pp. DESIGNATED STATES: RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1987-US3211 19871204. PRIORITY: US 1986-940693 19861211.

AB **Lubricating** oil and **grease**, functional fluid, and aq. system compns. comprise an extreme-pressure and/or friction-modifying amt. of (A) >1 phosphite ester characterized by the formula (R1O)(R2O)P(O)H (R1 = C512 straight-chain hydrocarbyl, R2 = C.ltoreq.12 branched-chain hydrocarbyl), and or (B) >1 S-contg. compn. selected from (1) >1 sulfurized olefin, (2) hydroxythioether, (3) N- and S-contg. compns. obtained by the reaction of >1 amino compd., **CS2**, and either hydrocarbon-substituted carboxylic acids or halogenated aliph. hydrocarbons, and (4) sulfurized and/or **CS2** reacted Mannich condensation products. Thus, a **lubricating** oil compn. contains a mixed phosphite (reaction products of 2-ethylhexanol, Alfol 810, and di-Me phosphite) 0.80, a hydroxythioether (propylene oxide-tert-dodecyl mercaptan reaction products) 0.75, C9 mono- and di-p-alkylated diphenylamine 0.35, basic Na petroleum sulfonate 0.25, basic Ca petroleum sulfonate 0.40 wt. part, 70 ppm silicone antifoam agent, and remainder a base oil.

IT **75-15-0D**, **Carbon disulfide**, reaction products with polyisobutenyl succinic anhydride or chloride and polyalkylene polyamines **75-21-8D**, Ethylene oxide, reaction products with tert-dodecyl mercaptan **75-56-9D**, Propylene oxide, reaction products with (poly)mercaptans **96-09-3D**, Styrene oxide, reaction products with tert-dodecyl mercaptan **2050-92-2D**, Diamylamine, reaction products with polyisobutenyl and **carbon disulfide** chloride

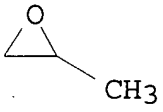
(extreme-pressure and/or friction-modifying additives contg., for **lubricants** and functional fluids)

RN 75-15-0 HCA
CN Carbon disulfide (8CI, 9CI) (CA INDEX NAME)



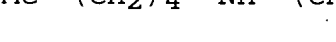
RN 75-21-8 HCA
CN Oxirane (9CI) (CA INDEX NAME)

RN 75-56-9 HCA
CN Oxirane, methyl- (9CI) (CA INDEX NAME)



RN 96-09-3 HCA
CN Oxirane, phenyl- (9CI) (CA INDEX NAME)

RN 2050-92-2 HCA
CN 1-Pentanamine, N-pentyl- (9CI) (CA INDEX NAME)



IC ICM C10M141-10
ICS C10M137-04; C10M173-02
ICI C10M141-10, C10M133-52, C10M135-02, C10M135-24, C10M137-04, C10M159-16; C10M173-02, C10M133-52, C10M135-02, C10M135-24, C10M137-04, C10M159-16; C10N030-06, C10N040-04, C10N060-10
CC 51-8 (Fossil Fuels, Derivatives, and Related Products)
ST **lubricating** oil extreme pressure additive; friction modifying **lubricating grease** additive; functional fluid additive phosphite ester; sulfurized compn phosphite ester **lubricant**
IT Alcohols, compounds
(C8-10, reaction products, with ethylhexanol and dimethylphosphite, extreme-pressure and/or friction modifying

additives contg., for **lubricants** and functional fluids)

IT **Lubricating grease** additives
Lubricating oil additives
(extreme-pressure, and/or friction-modifying, phosphite ester and/or sulfurized compns.)

IT **Hydraulic fluids**
(**transmission**, extreme-pressure and/or friction-modifying additives for, phosphite ester and/or sulfurized compns. as)

IT 115-11-7D, Isobutene, sulfurized 28805-52-9D, sulfurized 38094-72-3D, sulfurized 38094-73-4D, sulfurized
(extreme-pressure and or friction-modifying additives contg., for **lubricants** and functional fluids)

IT 50-00-0D, Formaldehyde, Mannich reaction products with alkyl-substituted phenol, alkylene polyamine, **carbon disulfide**, and/or polybutenyl succinic anhydride 60-24-2D, 2-Mercaptoethanol, reaction products with 1-decene 71-36-3D, n-Butanol, reaction products with dimethylphosphite and 2-ethylhexanol **75-15-0D**, **Carbon disulfide**, reaction products with polyisobutenyl succinic anhydride or chloride and polyalkylene polyamines **75-21-8D**, Ethylene oxide, reaction products with tert-dodecyl mercaptan **75-56-9D**, Propylene oxide, reaction products with (poly)mercaptans **96-09-3D**, Styrene oxide, reaction products with tert-dodecyl mercaptan 104-76-7D, reaction products with dimethylphosphite and alcs. 108-30-5D, Succinic anhydride, polyisobutenyl derivs., reaction products with polyalkylene polyamines and **carbon disulfide** 108-95-2D, Phenol, polybutyl-substituted, reaction products with formaldehyde, tetraethylenepentamine, and **carbon disulfide** 111-40-0D, Diethylenetriamine, reaction products with polyisobutenyl and **carbon disulfide** chloride 112-24-3D, Triethylene tetramine, reaction products with polysibutylene-substituted succinic anhydride and **carbon disulfide** 112-55-0D, n-Dodecyl mercaptan, reaction products with propylene oxide 112-57-2D, Tetraethylenepentamine, reaction products with polysibutylene-substituted succinic anhydride and **carbon disulfide** 868-85-9D, Dimethylphosphite, reaction products with straight- and branched-chain alcs. 872-05-9D, 1-Decene, reaction products with 2-mercaptoethanol **2050-92-2D**, Diamylamine, reaction products with polyisobutenyl and **carbon disulfide** chloride 4067-16-7D, Pentaethylenehexamine, reaction products with polyisobutenyl and **carbon disulfide** chloride 7704-34-9D, Sulfur, reaction products with Mannich condensates 9003-07-0D, Polypropylene, mixts. with pine oil, sulfurized 9003-27-4D, chloride 9003-29-6D, mercapto derivs. 25103-58-6D, tert-Dodecyl mercaptan, reaction products with epoxides 25154-52-3D, reaction products with tetraethylenepentamine, formaldehyde, polybutenyl succinic anhydride, and **carbon disulfide** 57425-57-7D, Polyamine H, reaction products with polyisobutylene-substituted succinic anhydride and **carbon**

disulfide
(extreme-pressure and/or friction-modifying additives contg., for **lubricants** and functional fluids)

L38 ANSWER 19 OF 20 HCA COPYRIGHT 2003 ACS on STN
68:31835 **Lubricating** oil load-carrying additives. Le Suer, William M. (Lubrizol Corp.). Fr. FR 1467073 19670127, 7 pp. (French). CODEN: FRXXAK. PRIORITY: US 19641110.

AB Additives of unknown structure contg. S, O, and N are prepd. by interaction of an amine with **CS2** and a C2-20 aliphatic epoxide at 0-75.degree.. E.g., 38 g. **CS2** was added during 20 min. to a mixt. of 37 g. Et2NH and 127 g. of a mixt. of epoxides contg. 50% 1,2-epoxyhexadecane and 40% 1,2-epoxyoctadecane. The temp. was maintained at 25-45.degree. until the reaction was completed and the mixt. was then heated at 100.degree. for 1 hr. The product was heated at 100.degree. and 30 mm. and then filtered to give a neutral liq. contg. 14.65% wt. S and 3.21% wt. N. An SAE-90 **gear oil** contg. 3.41% wt. of the product was tested in the Timken Load Test. The resulting oil film ruptured under a load of 13.6 kg. When tested alone, the **gear oil** withstood only 2.2 kg.

IT **108-18-9 111-92-2**
(reaction products with alkylene oxides and **carbon disulfide**, as **lubricating** oil wear inhibitor)

RN 108-18-9 HCA
CN 2-Propanamine, N-(1-methylethyl)- (9CI) (CA INDEX NAME)

i-Pr—NH—Pr-i

RN 111-92-2 HCA
CN 1-Butanamine, N-butyl- (9CI) (CA INDEX NAME)

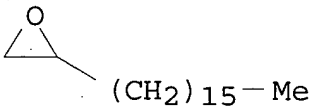
n-Bu—NH—Bu-n

IT **7320-37-8 7390-81-0**
(reaction products with **carbon disulfide** and diethylamine, as **lubricating** oil wear inhibitor)

RN 7320-37-8 HCA
CN Oxirane, tetradecyl- (9CI) (CA INDEX NAME)

$(CH_2)_{13}$—Me

RN 7390-81-0 HCA
CN Oxirane, hexadecyl- (9CI) (CA INDEX NAME)



IC C10M
CC 51 (Petroleum, Petroleum Derivatives, and Related Products)
ST LOAD CARRYING ADDITIVES **LUBRICANT**; AMINE-C DISULFIDE REACTION; **LUBRICANT** LOAD CARRYING ADDITIVES; **CARBON DISULFIDE**-AMINE REACTION; EPOXIDE-AMINE REACTANT ADDITIVES
IT Amines, compounds
(reaction products with alkylene oxides and **carbon disulfide**, as **lubricating** oil wear inhibitor)
IT **Lubricating** oil additives
(wear inhibitors, amine reaction products with **carbon disulfide** and alkylene oxides as)
IT Diethylamine
Nitrogen
(reaction products with alkylene oxides and **carbon disulfide**, as **lubricating** oil wear inhibitor)
IT **Carbon disulfide**
(reaction products with amines and alkylene oxides, as **lubricating** oil wear inhibitor)
IT Ethylene oxide
Propylene oxide
(reaction products with **carbon disulfide** and amines, as **lubricating** oil wear inhibitor)
IT **108-18-9 111-92-2**
(reaction products with alkylene oxides and **carbon disulfide**, as **lubricating** oil wear inhibitor)
IT **7320-37-8 7390-81-0**
(reaction products with **carbon disulfide** and diethylamine, as **lubricating** oil wear inhibitor)

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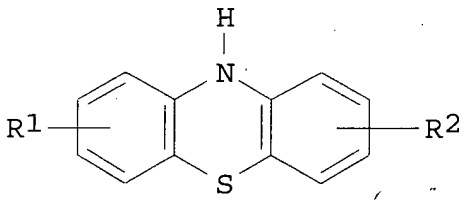
L54 ANSWER 1 OF 11 HCA COPYRIGHT 2003 ACS on STN
139:152089 Alkylated aryl amines, alkylated phenothiazine, and sulfurized olefins or fatty oils for **lubricating** oils with improved **antioxidant**-deposit control properties. Esche, Carl K., Jr.; Gatto, Vincent J.; Lam, William Y. (Ethyl Corporation, USA). U.S. US 6599865 B1 20030729, 11 pp. (English). CODEN: USXXAM. APPLICATION: US 2002-194517 20020712.

GI



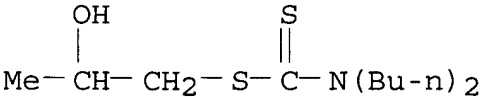
I

AB **Crankcase lubricating oil** **antioxidants**-deposit inhibitors contain, in addn. to the base oil, 0.05-2.5 wt.% of an alkylated diarylamine, 150-2500 ppm S (as the sulfurized olefin or sulfurized fatty oil, or an ashless dialkyldithiocarbamate), and 0.05-2.5 wt.% of an alkylated phenothiazine of general structure I, in which R1 is linear or branched C4-24-alkyl, aryl, heteroalkyl, or alkylaryl, and R2 = H or linear or branched C4-24-alkyl, aryl, heteroalkyl, or alkylaryl. Suitable sulfurized olefins and fatty oils include .alpha.-olefins and isomerized .alpha.-olefins, branched olefins and cycloalkenes, corn oil, canola oil, cottonseed oil, grapeseed oil, olive oil, palm oil, peanut oil, coconut oil. rape oil, sesame seed oil, soybean oil, sunflower oil, tallow, and fish oil. Acceptable base oils include paraffin oils, naphthenic oils, arom. oils, and synthetic oils. The **lubricating** oil can also contain 250-900 ppm P and addnl. additives.

IT **137319-56-3**
(**antioxidant**-deposit inhibitors; alkylated aryl amines, alkylated phenothiazine, and sulfurized olefins or fatty oils for **lubricating** oils with improved **antioxidant** -deposit control properties)

RN 137319-56-3 HCA

CN Carbamodithioic acid, dibutyl-, 2-hydroxypropyl ester (9CI) (CA INDEX NAME)



IC ICM C10M141-06

NCL 508254000; 508322000; 508331000
CC 51-8 (Fossil Fuels, Derivatives, and Related Products)
ST **crankcase lubricating oil**
antioxidant deposit inhibitor; sulfurized olefin
crankcase lubricating oil; alkylated
arylamine phenothiazine **lubricating** oil
antioxidanat
IT **Lubricating** oil additives
(**antioxidant**-deposit inhibitors; alkylated aryl amines, alkylated phenothiazine, and sulfurized olefins or fatty oils for **lubricating** oils with improved **antioxidant** -deposit control properties)
IT Amines, uses
(aralkyl, **antioxidant**-deposit inhibitors; alkylated aryl amines, alkylated phenothiazine, and sulfurized olefins or fatty oils for **lubricating** oils with improved **antioxidant**-deposit control properties)
IT **Lubricating** oils
(base oils; alkylated aryl amines, alkylated phenothiazine, and sulfurized olefins or fatty oils for **lubricating** oils with improved **antioxidant**-deposit control properties)
IT Aromatic oils (hydrocarbons)
Naphthenic oils
Paraffin oils
(base oils; alkylated aryl amines, alkylated phenothiazine, and sulfurized olefins or fatty oils for **lubricating** oils with improved **antioxidant**-deposit control properties)
IT Alkenes, uses
(branched, sulfurized, **antioxidant**-deposit inhibitors; alkylated aryl amines, alkylated phenothiazine, and sulfurized olefins or fatty oils for **lubricating** oils with improved **antioxidant**-deposit control properties)
IT **Lubricating oils**
(**crankcase**; alkylated aryl amines, alkylated phenothiazine, and sulfurized olefins or fatty oils for **lubricating** oils with improved **antioxidant** -deposit control properties)
IT Fats and Glyceridic oils, uses
(fish, sulfurized, **antioxidant**-deposit inhibitors; alkylated aryl amines, alkylated phenothiazine, and sulfurized olefins or fatty oils for **lubricating** oils with improved **antioxidant**-deposit control properties)
IT Fats and Glyceridic oils, uses
(grape seed, sulfurized, **antioxidant**-deposit inhibitors; alkylated aryl amines, alkylated phenothiazine, and sulfurized olefins or fatty oils for **lubricating** oils with improved **antioxidant**-deposit control properties)
IT Fats and Glyceridic oils, uses
(sesame, sulfurized, **antioxidant**-deposit inhibitors; alkylated aryl amines, alkylated phenothiazine, and sulfurized olefins or fatty oils for **lubricating** oils with improved **antioxidant**-deposit control properties)

IT Canola oil
Coconut oil
Corn oil
Cottonseed oil
Cycloalkenes
Glycerides, uses
Olive oil
Palm oil
Peanut oil
Rape oil
Tallow
(sulfurized, **antioxidant**-deposit inhibitors; alkylated aryl amines, alkylated phenothiazine, and sulfurized olefins or fatty oils for **lubricating** oils with improved **antioxidant**-deposit control properties)

IT Alkenes, uses
(.alpha.-, sulfurized, **antioxidant**-deposit inhibitors; alkylated aryl amines, alkylated phenothiazine, and sulfurized olefins or fatty oils for **lubricating** oils with improved **antioxidant**-deposit control properties)

IT 86-25-9, Diphenyl amine, octyl- 90-30-2 92-84-2D, Phenothiazine, alkyl derivs. 101-18-8D, 3-Hydroxydiphenylamine, alkyl derivs. 101-54-2, N-Phenyl-1,4-phenylenediamine 122-39-4D, Diphenyl amine, alkyl derivs. 122-39-4D, Diphenyl amine, styrenated 135-88-6, Phenyl-.beta.-naphthylamine 498-66-8D, Norbornene, dithiocarbamate derivs. 534-85-0, N-Phenyl-1,2-phenylenediamine 594-07-0D, Dithiocarbamic acid, alkyl derivs. 25619-54-9 26519-70-0 27177-41-9 32750-89-3 34731-32-3D, Ethylenebis(dithiocarbamate), alkyl derivs. 36878-20-3 42300-90-3, 10H-Phenothiazine, dinonyl- 50723-15-4, 10H-Phenothiazine, nonyl- 60029-65-4, 10H-Phenothiazine, dioctyl- 109447-79-2 125947-19-5 **137319-56-3** 167115-42-6 200053-44-7 200053-45-8 272774-38-6 465499-93-8 568585-02-4D, alkyl derivs. 568589-17-3 568589-18-4 568589-19-5 568589-20-8 568589-21-9 568589-22-0 568589-23-1 568589-24-2 568589-25-3 568589-26-4 568589-27-5
(**antioxidant**-deposit inhibitors; alkylated aryl amines, alkylated phenothiazine, and sulfurized olefins or fatty oils for **lubricating** oils with improved **antioxidant**-deposit control properties)

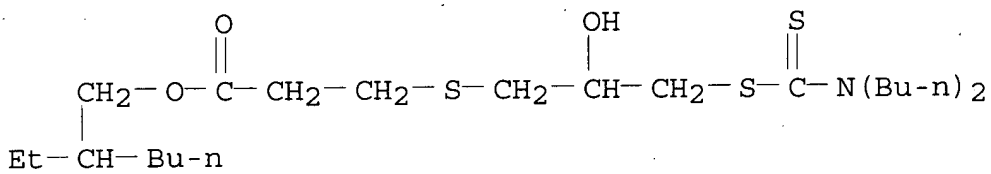
L54 ANSWER 2 OF 11 HCA COPYRIGHT 2003 ACS on STN
138:355993 Alkylthio- and hydroxy-substituted dithiocarbamates as **antiwear-antioxidants** for **lubricating oils** and **hydraulic fluids**. Gatto, Vincent James (Ethyl Corporation, USA). Eur. Pat. Appl. EP 1306370 A1 20030502, 20 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK. (English). CODEN: EPXXDW. APPLICATION: EP 2002-257421 20021025. PRIORITY: US 2001-62161 20011026.

AB **Lubricating** oil **antioxidant-antiwear**

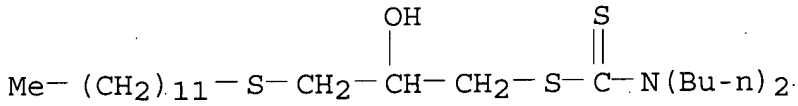
additives are alkylthio- and hydroxy-substituted dithiocarbamates of general formula R2-S-CH2CH(OH)CH2-S(S:)C-NRR1 [R and R1 = H or alkyl; R2 = alkyl, R3OC(:O)-CH2-, or R3-OC(:O)CH2CH2- (R3 = alkyl or -C(:S)-NRR1)]. Preferably, R1 = C3-8-alkyl, and R2 = C4-12-alkyl. The compds. are prepd. by reaction of CS2 with an alkyl glycidyl thioether (with formula R2-S-CH2-C2H3O) in the presence of an amine, HNRR1. The alkyl glycidyl thioether is, in turn, synthesized by reaction of a mercaptan (R2-SH) and epichlorohydrin. **Lubricating** oils or functional fluids contg. these additives are **crankcase engine oils**, diesel **engines**, railroad locomotives, natural gas-fueled **engines**, **hydraulic fluids**, automatic **transmission fluids**, and **antirust** and **antioxidn**. oils.

IT **519033-11-5P 519033-12-6P 519045-60-4P 519045-62-6P 519045-64-8P**
(alkylthio- and hydroxy-substituted dithiocarbamates as **antiwear-antioxidants** for **lubricating oils** and **hydraulic fluids**)

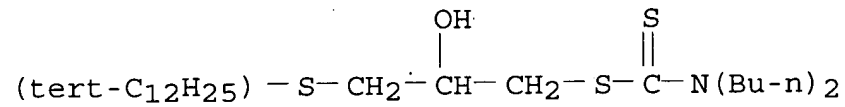
RN 519033-11-5 HCA
CN Propanoic acid, 3-[[3-[[(dibutylamino)thioxomethyl]thio]-2-hydroxypropyl]thio]-, 2-ethylhexyl ester (9CI) (CA INDEX NAME)



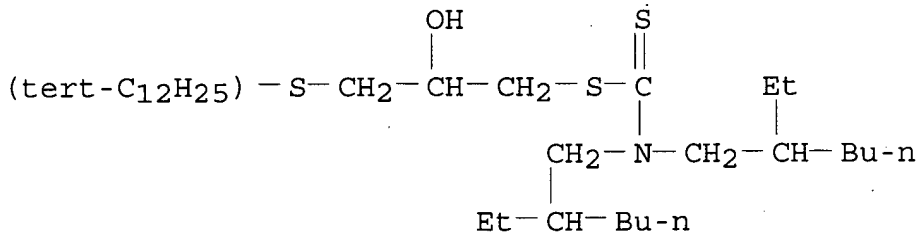
RN 519033-12-6 HCA
CN Carbamodithioic acid, dibutyl-, 3-(dodecylthio)-2-hydroxypropyl ester (9CI) (CA INDEX NAME)



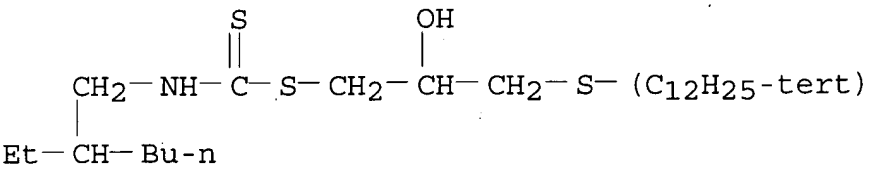
RN 519045-60-4 HCA
CN Carbamodithioic acid, dibutyl-, 3-(tert-dodecylthio)-2-hydroxypropyl ester (9CI) (CA INDEX NAME)



RN 519045-62-6 HCA
CN Carbamodithioic acid, bis(2-ethylhexyl)-, 3-(tert-dodecylthio)-2-hydroxypropyl ester (9CI) (CA INDEX NAME)



RN 519045-64-8 HCA
CN Carbamodithioic acid, (2-ethylhexyl)-, 3-(tert-dodecylthio)-2-hydroxypropyl ester (9CI) (CA INDEX NAME)



IC ICM C07C333-20
ICS C10M135-18; C10M135-22; C10N030-10
CC 51-8 (Fossil Fuels, Derivatives, and Related Products)
Section cross-reference(s): 23
ST dithiocarbamate **lubricating** oil **antiwear antioxidant**; **hydraulic fluid antiwear antioxidant**; **transmission fluid antiwear antioxidant**
IT **Lubricating** oil additives
(**antioxidants-antiwear**; alkylthio- and hydroxy-substituted dithiocarbamates as **antiwear-antioxidants** for **lubricating oils** and **hydraulic fluids**)
IT **Hydraulic fluids**
Slushing compositions
(**antiwear-antioxidant** additives for; alkylthio- and hydroxy-substituted dithiocarbamates as **antiwear-antioxidants** for **lubricating oils** and **hydraulic fluids**)
IT Amines, reactions
(condensation reaction of; in synthesis of alkylthio- and hydroxy-substituted dithiocarbamates as **antiwear-antioxidants** for **lubricating oils** and **hydraulic fluids**)
IT **Hydraulic fluids**
(**transmission**, automatic, **antiwear-antioxidant** additives for; alkylthio- and hydroxy-substituted dithiocarbamates as **antiwear-antioxidants** for **lubricating oils** and **hydraulic fluids**)
IT 20256-76-2D, reaction products with amines and carbon disulfide
29765-12-6D, reaction products with amines and carbon disulfide

45378-62-9D, Methyl glycidyl thioether, reaction products with amines and carbon disulfide 45975-83-5D, reaction products with amines and carbon disulfide 53414-23-6D, reaction products with amines and carbon disulfide 73479-00-2D, reaction products with amines and carbon disulfide 99818-05-0D, reaction products with amines and carbon disulfide 101842-92-6D, tert-Nonyl glycidyl thioether, reaction products with amines and carbon disulfide 101842-93-7D, Oxirane, [(tert-dodecylthio)methyl]-, reaction products with amines and carbon disulfide 343268-24-6D, reaction products with amines and carbon disulfide 519033-10-4D, reaction products with amines and carbon disulfide
(alkylthio- and hydroxy-substituted dithiocarbamates as **antiwear-antioxidants** for **lubricating oils** and **hydraulic fluids**)

IT 519033-08-0DP, S,N,N-trialkyl derivs. 519033-09-1DP, N,N,N'.N'-tetraalkyl derivs. **519033-11-5P 519033-12-6P 519045-60-4P 519045-62-6P 519045-64-8P**
(alkylthio- and hydroxy-substituted dithiocarbamates as **antiwear-antioxidants** for **lubricating oils** and **hydraulic fluids**)

IT 75-15-0, Carbon disulfide, reactions
(condensation reaction of; in synthesis of alkylthio- and hydroxy-substituted dithiocarbamates as **antiwear-antioxidants** for **lubricating oils** and **hydraulic fluids**)

IT 45357-98-0DP, Oxiranemethanethiol, S-alkyl thioethers
(synthesis and condensation reaction of; in synthesis of alkylthio- and hydroxy-substituted dithiocarbamates as **antiwear-antioxidants** for **lubricating oils** and **hydraulic fluids**)

L54 ANSWER 3 OF 11 HCA COPYRIGHT 2003 ACS on STN

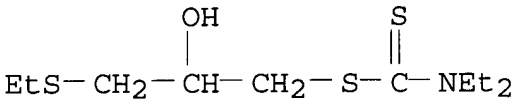
137:127291 1-Alkylthiopropanol-2-derivatives as multifunctional additives to **lubricating** oils. Latyuk, V. I.; Kelarev, V. I.; Korenev, K. D. (Ross. Gos. Univ. Nefti i Gaza im. I. M. Gubkina, Moscow, Russia). Neftekhimiya, 42(2), 145-149 (Russian) 2002. CODEN: NEFTAH. ISSN: 0028-2421. Publisher: Nauka.

AB N-,Cl-, and P-contg. derivs. of 1-alkylthio-3-R'-propanol-2 were prepd. using C2-C5 mercaptan fraction from purifn. of wide hydrocarbon fractions of Orenburg gas condensates as main components. The additives in base oil M-11 showed good **antiwear**, antiscuff, and **anticorrosion** properties.

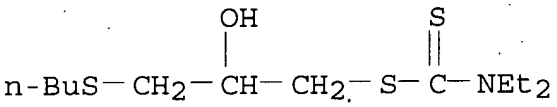
IT **444190-12-9P 444190-13-0P 444190-14-1P 444190-15-2P 444196-76-3P 444196-77-4P 444196-78-5P**
(1-alkylthiopropanol-2-derivs. as multifunctional additives to **lubricating** oils)

RN 444190-12-9 HCA

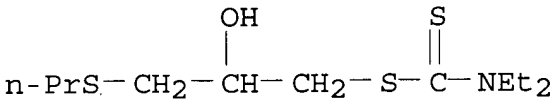
CN Carbamodithioic acid, diethyl-, 3-(ethylthio)-2-hydroxypropyl ester (9CI) (CA INDEX NAME)



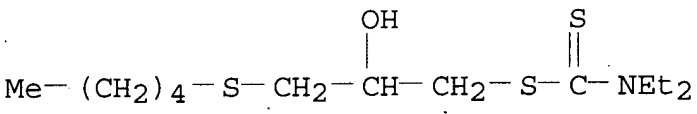
RN 444190-13-0 HCA
CN Carbamodithioic acid, diethyl-, 3-(butylthio)-2-hydroxypropyl ester (9CI) (CA INDEX NAME)



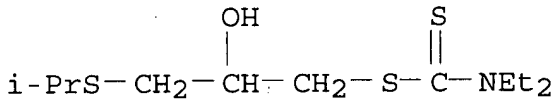
RN 444190-14-1 HCA
CN Carbamodithioic acid, diethyl-, 2-hydroxy-3-(propylthio)propyl ester (9CI) (CA INDEX NAME)



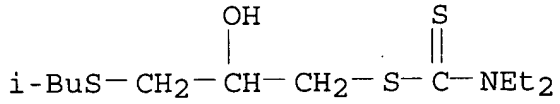
RN 444190-15-2 HCA
CN Carbamodithioic acid, diethyl-, 2-hydroxy-3-(pentylthio)propyl ester (9CI) (CA INDEX NAME)



RN 444196-76-3 HCA
CN Carbamodithioic acid, diethyl-, 2-hydroxy-3-[(1-methylethyl)thio]propyl ester (9CI) (CA INDEX NAME)

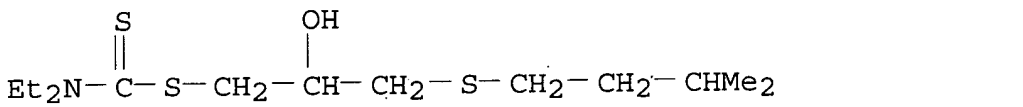


RN 444196-77-4 HCA
CN Carbamodithioic acid, diethyl-, 2-hydroxy-3-[(2-methylpropyl)thio]propyl ester (9CI) (CA INDEX NAME)



RN 444196-78-5 HCA
CN Carbamodithioic acid, diethyl-, 2-hydroxy-3-[(3-

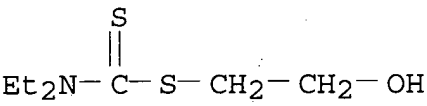
methylbutyl)thio]propyl ester (9CI) (CA INDEX NAME)



CC 51-8 (Fossil Fuels, Derivatives, and Related Products)
ST **lubricating** oil additive multifunctional
IT **Lubricating** oil additives
(multifunctional; 1-alkylthiopropanol-2-derivs. as multifunctional additives to **lubricating** oils)
IT 14359-99-0P 18915-87-2P 26404-98-8P 51735-17-2P 51735-18-3P
51735-19-4P 54974-67-3P 58446-08-5P 70602-90-3P 444190-06-1P
444190-07-2P 444190-08-3P 444190-09-4P 444190-10-7P
444190-11-8P **444190-12-9P 444190-13-0P**
444190-14-1P 444190-15-2P 444190-16-3P
444190-17-4P 444190-18-5P 444190-19-6P 444190-20-9P
444190-21-0P 444190-22-1P 444190-23-2P 444196-71-8P
444196-72-9P 444196-73-0P 444196-74-1P 444196-75-2P
444196-76-3P 444196-77-4P 444196-78-5P
444196-79-6P 444196-80-9P 444196-81-0P 444196-82-1P
444196-83-2P 444196-84-3P
(1-alkylthiopropanol-2-derivs. as multifunctional additives to **lubricating** oils)
IT 1068-47-9DP, S-alkyl derivs.
(1-alkylthiopropanol-2-derivs. as multifunctional additives to **lubricating** oils)
IT 6478-04-2P 23451-67-4P 51735-15-0P 51735-16-1P 55131-65-2P
69803-88-9P 444190-01-6P 444190-02-7P 444190-03-8P
444190-05-0P 444196-66-1P 444196-67-2P 444196-68-3P
444196-69-4P 444196-70-7P
(**lubricating** oil additives)

L54 ANSWER 4 OF 11 HCA COPYRIGHT 2003 ACS on STN
135:152551 Synthesis and investigation of some derivatives of diethyldithiocarbamic acid .beta.-hydroxyethyl ester as **lubricating** oil additives. Alekperov, R. K.; Gasanov, V. S.; Mustafaev, Sh. A.; Dzhafarov, I. A.; Kostyanovskii, R. G.; Astanova, A. D. (Azerb. Pedagog. Univ. im. N. Tusi, Azerbaijan). Azerbaidzhanskii Khimicheskii Zhurnal (3), 29-33 (Russian) 2000. CODEN: AZKZAU. ISSN: 0005-2531. OTHER SOURCES: CASREACT 135:152551. Publisher: Elm.
AB Et2NCS2CH2CH2OCH2OR (R = alkyl), Et2NCS2CH2CH2OCH2NR1R2 (NR1R2 = NEt2, NBu2, morpholino, piperidino), and Et2NCS2CH2CH2OCXNHC6H4R3 (X = O, R3 = H, 2-Me, 3-Me; X = S, R3 = H) were prepd. by reactions of Et2NCS2CH2CH2OH with ROCH2Cl, R1R2NH + HCHO, and R3C6H4NCX, resp. The products were tested as **anticorrosion** additives for DS-11 oil and **anti-wear** additives for TB-20 oil.
IT **5347-18-2**
(2-hydroxyethyl diethyldithiocarbamate reaction products as **lubricating** oil additives)

RN 5347-18-2 HCA
CN Carbamodithioic acid, diethyl-, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)



CC 23-17 (Aliphatic Compounds)
Section cross-reference(s): 51
ST hydroxyethyl diethyldithiocarbamate reaction product prepn oil additive; **lubricating** oil additive hydroxyethyl diethyldithiocarbamate reaction product
IT **Lubricating** oil additives
(2-hydroxyethyl diethyldithiocarbamate reaction products)
IT 352427-45-3P 352427-47-5P 352427-50-0P 352427-51-1P 352427-53-3P 352427-55-5P 352427-56-6P 352427-57-7P 352427-58-8P
(2-hydroxyethyl diethyldithiocarbamate reaction products as **lubricating** oil additives)
IT 50-00-0, Formaldehyde, reactions 103-71-9, Phenyl isocyanate, reactions 103-72-0, Phenyl isothiocyanate 107-30-2, Chloromethyl methyl ether 109-89-7, Diethylamine, reactions 110-89-4, Piperidine, reactions 110-91-8, Morpholine, reactions 111-92-2, Dibutylamine 614-68-6, o-Tolyl isocyanate 621-29-4, m-Tolyl isocyanate 2351-69-1, Butyl chloromethyl ether 3188-13-4, Chloromethyl ethyl ether 3587-57-3, Chloromethyl propyl ether **5347-18-2** 19416-65-0, Chloromethyl pentyl ether 34180-11-5, Chloromethyl isobutyl ether
(2-hydroxyethyl diethyldithiocarbamate reaction products as **lubricating** oil additives)
IT 352427-46-4P 352427-48-6P 352427-49-7P 352427-52-2P 352427-54-4P
(2-hydroxyethyl diethyldithiocarbamate reaction products as **lubricating** oil additives)

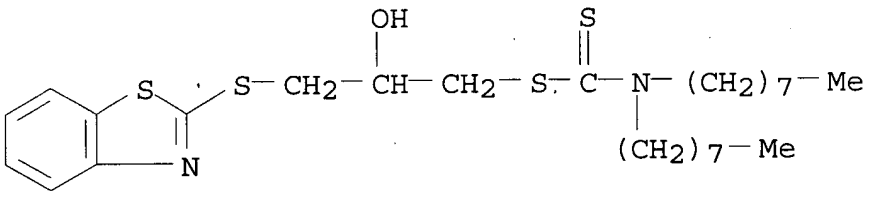
L54 ANSWER 5 OF 11 HCA COPYRIGHT 2003 ACS on STN
130:254641 The friction and wear behaviors of S-[2-S-(2-hydroxylpropyl)benthiazole]dioctyldithiocarbamic acid ester as additive in liquid paraffin. Zhang, Junyan; Liu, Weimin; Xue, Qunji (Lanzhou Institute of Chemical Physics, Laboratory of Solid Lubrication, Chinese Academy of Sciences, Lanzhou, 730000, Peop. Rep. China). Wear, 224(1), 50-55 (English) 1999. CODEN: WEARAH. ISSN: 0043-1648. Publisher: Elsevier Science S.A..
AB There has been a growing concern for the use of mineral oils because of the worldwide interest in environmental issues. This has promoted the use of ashless additives as environmental friendly **lubricants**. A potential ashless additive, S-[2-S-(2-hydroxylpropyl)benthiazole]dioctyldithiocarbamic acid ester, was prepd. in this work. The friction and wear behaviors of the synthesized compd. as an additive in liq. paraffin were

evaluated with a four-ball wear tester. The elemental compn. and chem. nature of the **antiwear** films generated on steel counterface were investigated with electron probe microanal. (EPMA) and XPS. It was found that the synthesized additive had excellent **antiwear** performance. The additive reacted with counterface metal and generated a surface protective film consisting of FeS, org. sulfur compd., FeSO4, and absorbed compd. contg. N.

IT **221469-25-6**
(**lubricating** oil **antiwear** additives)

RN 221469-25-6 HCA

CN Carbamodithioic acid, dioctyl-, 3-(2-benzothiazolylthio)-2-hydroxypropyl ester (9CI) (CA INDEX NAME)



CC 51-8 (Fossil Fuels, Derivatives, and Related Products)

ST **lubricating** oil **antiwear** additive

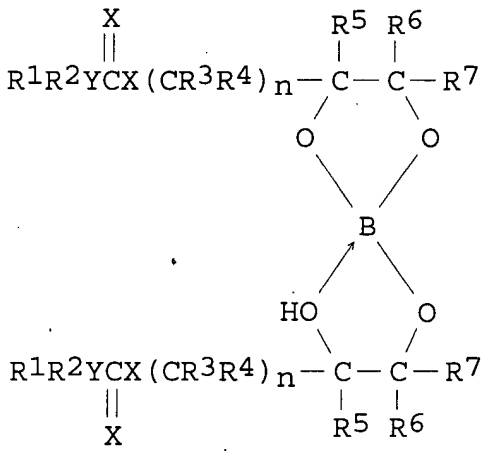
IT **Lubricating** oil additives
(**antiwear**; friction and wear behaviors of S-[2-S-(2-hydroxylpropyl)benthiazole]dioctyldithiocarbamic acid ester as additive in liq. paraffin)

IT **221469-25-6**
(**lubricating** oil **antiwear** additives)

L54 ANSWER 6 OF 11 HCA COPYRIGHT 2003 ACS on STN

125:333865 Dithiocarbamoyl diols and borate esters thereof for use in **lubricant** compositions. Chiu, I-ching (Pennzoil Products Company, USA). U.S. US 5560853 A 19961001, 8 pp., Cont. of U.S. Ser. No. 574,714, abandoned. (English). CODEN: USXXAM. APPLICATION: US 1992-851265 19920313. PRIORITY: US 1990-574714 19900830.

GI



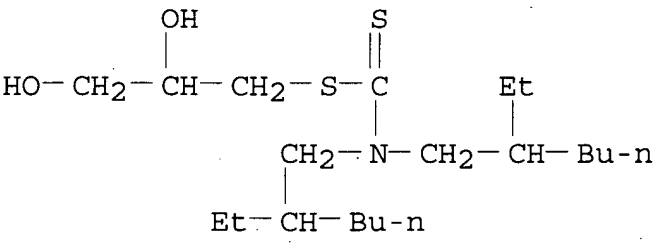
I

AB A borate ester having the formula I or [(R1R2)Y(C:X)X(CR3R4)nCHR5CR6R7O]3B, wherein Y is N, S or O; X is O or S; R1 and R2 are, independent of one another, selected from the group consisting of H, C1-40 hydrocarbon residues and C3-50 cycloalkyl, aryl and aralkyl, each of which may further contain N, O or S; R3, R4, R5, R6 and R7 are independent of one another, selected from the group consisting of H and C1-8 hydrocarbon residues, and n = 0-4. An **antiwear/antioxidant/antifriction/antirust** additive comprises the borate ester of the invention when added to a **lubricating** oil.

IT **183503-84-6P**
(intermediate; in prepn. of dithiocarbamoyl diol borate esters for use in **lubricant** compns.)

RN 183503-84-6 HCA

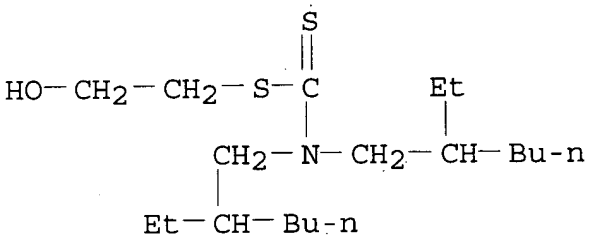
CN Carbamodithioic acid, bis(2-ethylhexyl)-, 2,3-dihydroxypropyl ester (9CI) (CA INDEX NAME)



IT **183503-88-0**
(intermediate; in prepn. of dithiocarbamoyl diol borate esters for use in **lubricant** compns.)

RN 183503-88-0 HCA

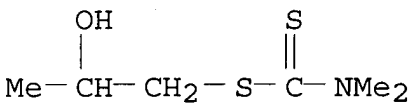
CN Carbamodithioic acid, bis(2-ethylhexyl)-, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)



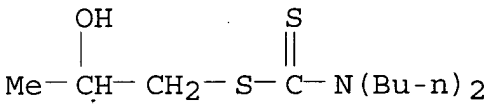
IC ICM C10M139-00
ICS C10M135-18
NCL 508143000
CC 51-8 (Fossil Fuels, Derivatives, and Related Products)
ST dithiocarbamoyl diol borate ester **lubricating** oil; **lubricant** dithiocarbamoyl diol borate multifunctional additive
IT **Lubricating** oil additives
(**antifriction-antioxidants-antiwear** -rust inhibitors; prepn. of dithiocarbamoyl diol borate esters as multifunctional additives for **engine oils**)
IT 75-15-0, Carbon disulfide, reactions 96-24-2, 3-Chloro-1,2-propanediol 106-20-7, Bis(2-ethylhexyl)amine 106-89-8, reactions 112-90-3, Oleyl amine 556-52-5, Oxiranemethanol 1120-48-5, Dioctylamine
(in prepn. of dithiocarbamoyl diol borate esters for use in **lubricant** compns.)
IT **183503-84-6P**
(intermediate; in prepn. of dithiocarbamoyl diol borate esters for use in **lubricant** compns.)
IT **183503-88-0**
(intermediate; in prepn. of dithiocarbamoyl diol borate esters for use in **lubricant** compns.)
IT 183503-85-7P
(multifunctional additive; prepn. of dithiocarbamoyl diol borate esters for use in **lubricant** compns.)
IT 7440-50-8DP, Copper, complexes with 3-Bis(2-ethylhexyl)dithiocarbamoyl-1,2-propanediol borate ester 183503-85-7DP, copper complexes 183503-86-8P 183503-87-9P 183503-89-1P
(prepn. of dithiocarbamoyl diol borate esters for use in **lubricant** compns.)

L54 ANSWER 7 OF 11 HCA COPYRIGHT 2003 ACS on STN
115:236138 Multifunctional **lubricant** additives. Farng, Lienpao; Horodysky, Andrew G. (Mobil Oil Corp., USA). U.S. US 5019284 A 19910528, 7 pp. (English). CODEN: USXXAM. APPLICATION: US 1989-381882 19890719.
AB Ashless hydrogen phosphonate dihydrocarbyl dithiocarbamates, e.g., reaction products of S-2-hydroxypropyl N,N-di-Me dithiocarbamate and di-Me hydrogen phosphonate, are effective **antioxidant-antiwear** additives for **lubricants**.

IT **22410-69-1D**, reaction products with di-Me hydrogen phosphonate **137319-56-3D**, reaction products with di-Me hydrogen phosphonate
(**antioxidant-antiwear** additives, for **lubricants**)
RN 22410-69-1 HCA
CN Carbamodithioic acid, dimethyl-, 2-hydroxypropyl ester (9CI) (CA INDEX NAME)

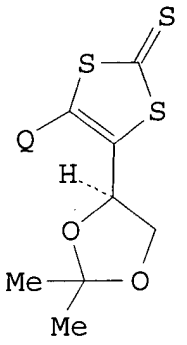


RN 137319-56-3 HCA
CN Carbamodithioic acid, dibutyl-, 2-hydroxypropyl ester (9CI) (CA INDEX NAME)

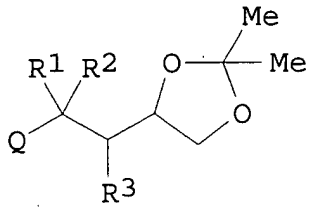


IC ICM C10M137-04
ICS C10M135-18
NCL 252046700
CC 51-8 (Fossil Fuels, Derivatives, and Related Products)
ST **lubricant antioxidant antiwear** additive dithiocarbamate
IT **Lubricating grease** additives
Lubricating oil additives
(**antioxidants-antiwear**, hydrogen phosphonate dihydrocarbyl dithiocarbamates, prepn. of)
IT 868-85-9D, Dimethyl hydrogen phosphonate, reaction products with hydroxypropyl dialkyl dithiocarbamates **22410-69-1D**, reaction products with di-Me hydrogen phosphonate **137319-56-3D**, reaction products with di-Me hydrogen phosphonate
(**antioxidant-antiwear** additives, for **lubricants**)

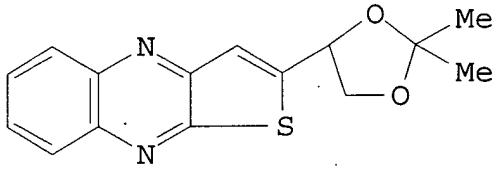
L54 ANSWER 8 OF 11 HCA COPYRIGHT 2003 ACS on STN
113:6265 Model studies related to the cofactor of oxomolybdoenzymes. Part 3. Larsen, Lesley; Rowe, David J.; Garner, C. David; Joule, John A. (Chem. Dep., Manchester Univ., Manchester, M13 9PL, UK). Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (12), 2317-27 (English) 1989. CODEN: JCPRB4. ISSN: 0300-922X. OTHER SOURCES: CASREACT 113:6265.
GI



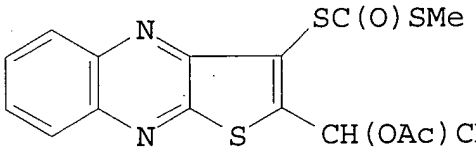
I



II



III



IV

AB 2-(D-arabino-Tetrahydroxybutyl)quinoxaline reacted selectively with Me2CO to give the diol acetal which was converted into mono- and dimesylates and -tosylates, and, via the Et ortho ester into the alkene acetal. Both thiocyanogen and Br added to the alkene; all attempted conversions of the former adduct into a 1,2-dithiol failed; attempts to displace halogen from the latter with S nucleophiles led in most cases simply to elimination of halogen. However, dimethyldithiocarbamate effected HBr elimination and thus formation of the bromoalkene acetal. On further reaction of this with Br, a tribromo adduct was obtained, methoxide treatment of which gave the dibromoalkene acetal. The epoxide acetals were formed by base treatment of monomesylates, but attempted use of the epoxides for the introduction of S functionality at best caused elimination thence reversion to the alkene acetal, and more often resulted in complex product mixts. Exposure of the dimesylate and ditosylate to sodium N,N-dimethyldithiocarbamate led to the enol mesylate and tosylate. Exposure of the monomesylates and to sodium N,N-dimethyldithiocarbamate, then acid, then H2S gave, according to exact conditions, the thiole I (Q = quinoxalin-2-yl through out this abstr.) or thiolane, together with the alc. II (R1 = R2 = H, R3 = OH). The .alpha.-bromo ketone II (R1R2 = O, R3 = Br) was prepd. by bromination of the ketone, itself available from reaction of the diol acetal with P4S10, or better from the enol mesylate via addn. of Br then hydrolysis. Displacements of bromine in the bromo ketone

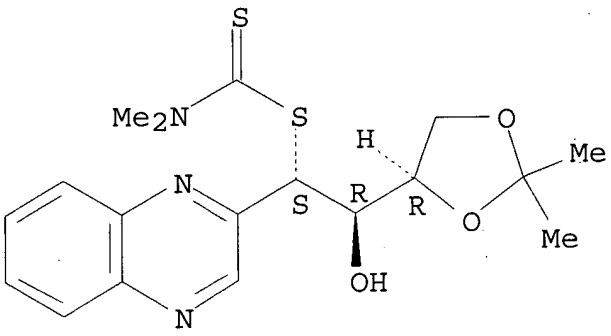
with S nucleophiles were successful, but the products could not then be converted into thioketones. Treatment of the dibromoalkene with dipotassium trithiocarbonate gave some thiole I, but mainly the thieno[2,3-b]quinoxaline III; similarly, reaction of the thiole I with base followed by MeI and then Ac2O gave the thieno[2,3-b]quinoxaline IV.

IT **117926-97-3P 117926-98-4P**
(prepn. and sequential reaction of, with trifluoroacetic acid and hydrogen sulfide)

RN 117926-97-3 HCA

CN Carbamodithioic acid, dimethyl-, 2-(2,2-dimethyl-1,3-dioxolan-4-yl)-2-hydroxy-1-(2-quinoxalinyl)ethyl ester, [4R-[4R*(1S*,2R*)]]- (9CI) (CA INDEX NAME)

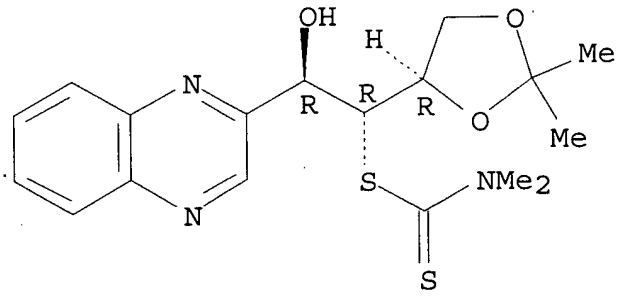
Absolute stereochemistry.



RN 117926-98-4 HCA

CN Carbamodithioic acid, dimethyl-, 1-(2,2-dimethyl-1,3-dioxolan-4-yl)-2-hydroxy-2-(2-quinoxalinyl)ethyl ester, [4R-[4R*(1R*,2R*)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

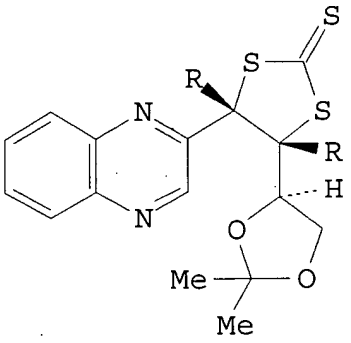


CC 28-16 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 26

IT **117926-97-3P 117926-98-4P**
(prepn. and sequential reaction of, with trifluoroacetic acid and

hydrogen sulfide)
IT 73508-07-3P, Molybdoenzyme **molybdenum** cofactor
(synthesis of org. part of, model for)

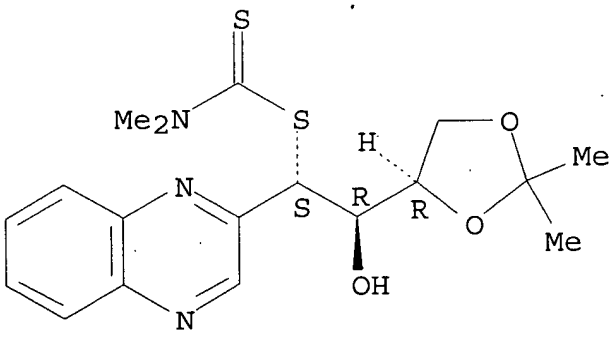
L54 ANSWER 9 OF 11 HCA COPYRIGHT 2003 ACS on STN
110:23607 Synthesis of 1-(quinoxalin-2-yl)-alkane-1,2-dithiols and -alkene-1,2-dithiols of relevance to the molybdoenzyme cofactor, Moco. Larsen, Lesley; Rowe, David J.; Garner, C. David; Joule, John A. (Chem. Dep., Manchester Univ., Manchester, M13 9PL, UK). Tetrahedron Letters, 29(12), 1453-6 (English) 1988. CODEN: TELEAY. ISSN: 0040-4039. OTHER SOURCES: CASREACT 110:23607.
GI



I

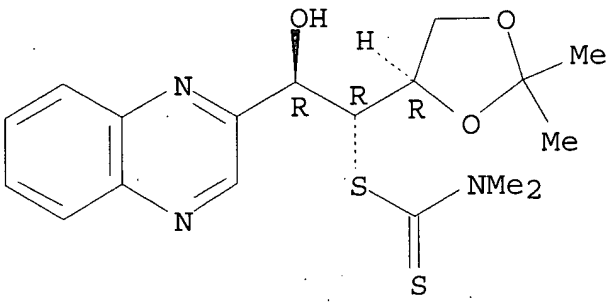
AB Quinoxalines I (R = H, RR = bond) were prepd. as model compds. for the pterin which ligands **Mo** in the oxomolybdenum enzyme cofactor, Moco.
IT **117926-97-3P 117926-98-4P 117926-99-5P**
(prepn. and mesylation of)
RN 117926-97-3 HCA
CN Carbamodithioic acid, dimethyl-, 2-(2,2-dimethyl-1,3-dioxolan-4-yl)-2-hydroxy-1-(2-quinoxalinyl)ethyl ester, [4R-[4R*(1S*,2R*)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

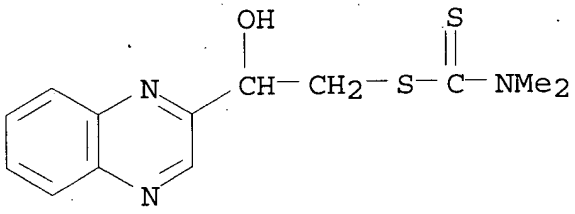


RN 117926-98-4 HCA
CN Carbamodithioic acid, dimethyl-, 1-(2,2-dimethyl-1,3-dioxolan-4-yl)-2-hydroxy-2-(2-quinoxalinyl)ethyl ester, [4R-[4R*(1R*,2R*)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



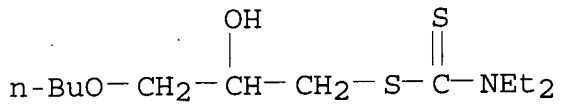
RN 117926-99-5 HCA
CN Carbamodithioic acid, dimethyl-, 2-hydroxy-2-(2-quinoxalinyl)ethyl ester (9CI) (CA INDEX NAME)



CC 26-9 (Biomolecules and Their Synthetic Analogs)
IT 117926-93-9P **117926-97-3P 117926-98-4P**
117926-99-5P
(prepn. and mesylation of)

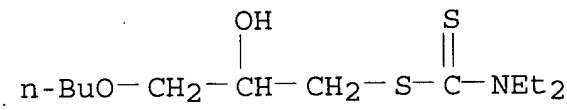
L54 ANSWER 10 OF 11 HCA COPYRIGHT 2003 ACS on STN
99:87414 Mechanism of the formation of additives to oils of diethyldithiocarbamate type. Korenev, K. D.; Belov, P. S.; Barai, N. S. (Inst. Neftekhim. Gazov. Prom. im. Gubkina, Baku, USSR). Neftekhimiya, 23(3), 409-12 (Russian) 1983. CODEN: NEFTAH. ISSN: 0028-2421.
AB The rate of reaction of Et2NCS2Na with ClCH2CH(OH)CH2OBu is retarded by complexation between the reactants. Addn. of OH- alleviates the situation and permits Et2NCS2CH2CH(OH)CH2OBu to be obtained almost quant.
IT **85144-46-3P**
(prepn. of, effect of hydroxide on)
RN 85144-46-3 HCA
CN Carbamodithioic acid, diethyl-, 3-butoxy-2-hydroxypropyl ester (9CI)

(CA INDEX NAME)

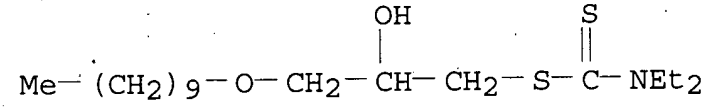


CC 22-4 (Physical Organic Chemistry)
IT **Lubricating** oil additives
(dialkyldithiocarbamate esters, prepn. of, effect of, complexation and hydroxide addn. on)
IT **85144-46-3P**
(prepn. of, effect of hydroxide on)

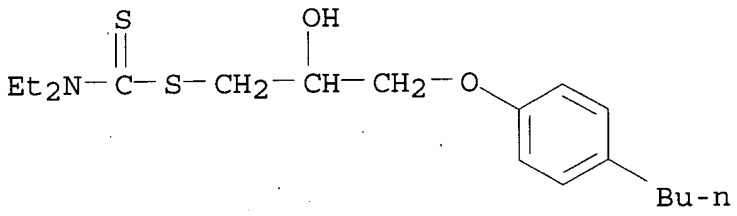
L54 ANSWER 11 OF 11 HCA COPYRIGHT 2003 ACS on STN
98:142922 Synthesis and properties of nitrogen-, sulfur-, and phosphorus-containing additives made from glycerol monochlorohydrin ethers. Belov, P. S.; Korenev, K. D.; Barai, N. S.; Parfenova, V. A. (Mosk. Inst. Neftekhim. Gazov. Prom., Moscow, USSR). Neftepererabotka i Neftekhimiya (Moscow, Russian Federation) (1), 20-2 (Russian) 1983. CODEN: NNNSAF. ISSN: 0028-1190.
AB ROH (R = Bu, n-C10H21, 4-Me3CC6H4, 4-tert-C8H17C6H4, C14-C18 fatty acid residue) reacted with epichlorohydrin in the presence of AV-17 anion exchanger or zeolite-contg. aluminosilicate AShNTs-3 to give the corresponding ROCH2CH(OH)CH2Cl (I) in >90% yield. I reacted with NaS2CNEt2 and with KSP(S)(OR1)2 (R1 = C6H4C18H37-sec, C6H4CMe3-4, C6H4C8H17-tert-4) to give 7 corresponding ash-free ROCH2CHXCH2SR2 [X = OH, OAc, O2CBu; R2 = CSNEt2, P(S)(OR1)2], useful as **lubricating**-oil additives, in .gtoreq.90% yield.
IT **85144-46-3P 85144-47-4P 85144-48-5P**
(prepn. of, as **lubricating** oil additive)
RN 85144-46-3 HCA
CN Carbamodithioic acid, diethyl-, 3-butoxy-2-hydroxypropyl ester (9CI) (CA INDEX NAME)



RN 85144-47-4 HCA
CN Carbamodithioic acid, diethyl-, 3-(decyloxy)-2-hydroxypropyl ester (9CI) (CA INDEX NAME)



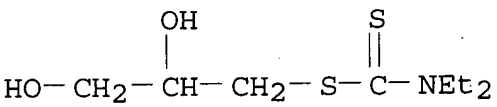
RN 85144-48-5 HCA
CN Carbamodithioic acid, diethyl-, 3-(4-butylphenoxy)-2-hydroxypropyl ester (9CI) (CA INDEX NAME)



CC 23-17 (Aliphatic Compounds)
Section cross-reference(s): 25, 29, 51
ST **lubricating** oil additive thiocarbamate thiophosphate; glyceryl dithiocarbamate dithiophosphate ether ester
IT **Lubricating** oil additives
(glyceryl ether and ester dithiocarbamates and dithiophosphates)
IT **85144-46-3P 85144-47-4P 85144-48-5P**
85144-49-6P 85144-50-9P 85144-51-0DP, fatty acid .alpha.-ester
85155-63-1P
(prepn. of, as **lubricating** oil additive)

=> d l55 1-32 cbib hitstr

L55 ANSWER 1 OF 32 HCA COPYRIGHT 2003 ACS on STN
134:17651 Synthesis and Antifungal Activity of Novel Bisdithiocarbamate Derivatives of Carbohydrates against Fusarium oxysporum f. sp. lini. Rafin, Catherine; Veignie, Etienne; Sancholle, Michel; Postel, Denis; Len, Christophe; Villa, Pierre; Ronco, Gino (Laboratoire de Mycologie-Phytopathologie-Environnement, Universite du Littoral, Calais, 62228, Fr.). Journal of Agricultural and Food Chemistry, 48(11), 5283-5287 (English) 2000. CODEN: JAFCAU. ISSN: 0021-8561. OTHER SOURCES: CASREACT 134:17651. Publisher: American Chemical Society.
IT **90886-62-7P**
(synthesis and antifungal activity of novel bis-dithiocarbamate glycerols against fusarium oxysporum)
RN 90886-62-7 HCA
CN Carbamodithioic acid, diethyl-, 2,3-dihydroxypropyl ester (9CI) (CA INDEX NAME)

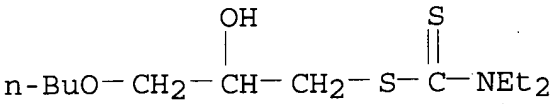


L55 ANSWER 2 OF 32 HCA COPYRIGHT 2003 ACS on STN
133:237375 Prospects for development of syntheses based on glycerol. Kimsanov, B. Kh; Karimov, M. B.; Rasulov, S. A.; Rakhmankulov, D. L.; Dmitriev, Yu. K. (Tadzhikskii Gos. Nats. Univ., Dushanbe, 734025, Tajikistan). Bashkirskii Khimicheskii Zhurnal, 7(1), 8-15

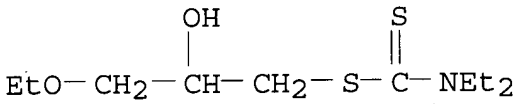
(Russian) 2000. CODEN: BKZHFU. ISSN: 0869-8406. Publisher: Izdatel'stvo "Reaktiv".

IT **85144-46-3P 294209-83-9P 294209-84-0P 294209-85-1P 294209-86-2P 294209-87-3P**
(glycerol deriv. prepn.)

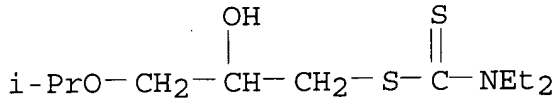
RN 85144-46-3 HCA
CN Carbamodithioic acid, diethyl-, 3-butoxy-2-hydroxypropyl ester (9CI) (CA INDEX NAME)



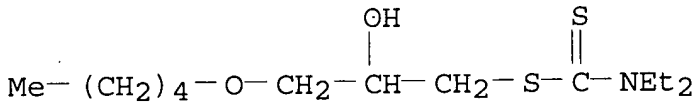
RN 294209-83-9 HCA
CN Carbamodithioic acid, diethyl-, 3-ethoxy-2-hydroxypropyl ester (9CI) (CA INDEX NAME)



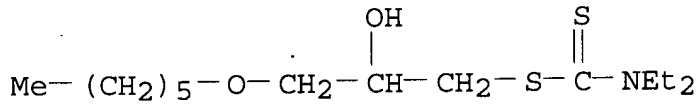
RN 294209-84-0 HCA
CN Carbamodithioic acid, diethyl-, 2-hydroxy-3-(1-methylethoxy)propyl ester (9CI) (CA INDEX NAME)



RN 294209-85-1 HCA
CN Carbamodithioic acid, diethyl-, 2-hydroxy-3-(pentyloxy)propyl ester (9CI) (CA INDEX NAME)

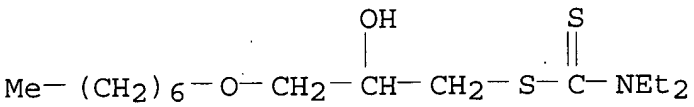


RN 294209-86-2 HCA
CN Carbamodithioic acid, diethyl-, 3-(hexyloxy)-2-hydroxypropyl ester (9CI) (CA INDEX NAME)



RN 294209-87-3 HCA
CN Carbamodithioic acid, diethyl-, 3-(heptyloxy)-2-hydroxypropyl ester

(9CI) (CA INDEX NAME)

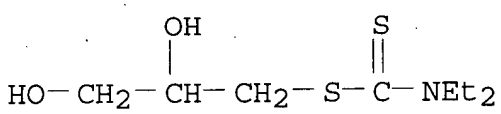


L55 ANSWER 3 OF 32 HCA COPYRIGHT 2003 ACS on STN
133:105230 Synthesis of dithio-, thio- and carbamoyl ester derivatives of monosaccharides and itols. Len, Christophe; Postel, Denis; Ronco, Gino; Villa, Pierre (Laboratoire de Chimie Organique et Cinetique, Universite de Picardie-Jules Verne 33, Amiens, 80039, Fr.). Phosphorus, Sulfur and Silicon and the Related Elements, 133, 41-59 (English) 1998. CODEN: PSSLEC. ISSN: 1042-6507. Publisher: Gordon & Breach Science Publishers.

IT **90886-62-7P**
(synthesis of dithio-, thio-, and carbamoyl ester derivs. of monosaccharides and itols as fungicides)

RN 90886-62-7 HCA

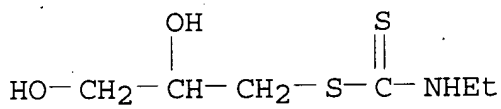
CN Carbamodithioic acid, diethyl-, 2,3-dihydroxypropyl ester (9CI) (CA INDEX NAME)



IT **282721-93-1P**
(synthesis of dithio-, thio-, and carbamoyl ester derivs. of monosaccharides and itols as fungicides)

RN 282721-93-1 HCA

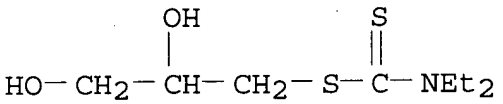
CN Carbamodithioic acid, ethyl-, 2,3-dihydroxypropyl ester (9CI) (CA INDEX NAME)



L55 ANSWER 4 OF 32 HCA COPYRIGHT 2003 ACS on STN
126:27971 Synthesis of carbamic esters derivatives of itols: Antifungal activity against various crop diseases. Len, Christophe; Postel, Denis; Ronco, Gino; Villa, Pierre; Goubert, Christel; Jeufrault, Eric; Mathon, Bernard; Simon, Herve (Laboratoire de Chimie Organique et Cinetique, Universite de Picardie-Jules Verne, Amiens, 80039, Fr.). Journal of Agricultural and Food Chemistry, 45(1), 3-6 (English) 1997. CODEN: JAFCAU. ISSN: 0021-8561. Publisher: American Chemical Society.

IT **90886-62-7P**
(intermediate in prepn. of itol carbamic esters deriv.

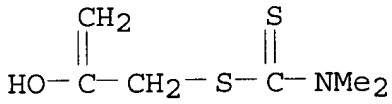
fungicides)
RN 90886-62-7 HCA
CN Carbamodithioic acid, diethyl-, 2,3-dihydroxypropyl ester (9CI) (CA INDEX NAME)



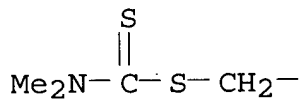
L55 ANSWER 5 OF 32 HCA COPYRIGHT 2003 ACS on STN
125:99946 Chemical sensitization of silver halide emulsions. Grzeskowiak, Nicholas E.; Hobson, Rachel J.; Mott, Andrew W. (Minnesota Mining and Mfg. Co., USA). Eur. Pat. Appl. EP 713132 A1 19960522, 20 pp. DESIGNATED STATES: R: DE, FR, GB, IT. (English). CODEN: EPXXDW. APPLICATION: EP 1995-307621 19951026. PRIORITY: GB 1994-23266 19941118.
IT **179098-56-7**
(prepn. and use as chem. sensitizer for silver halide photog. emulsions)
RN 179098-56-7 HCA
CN Carbamodithioic acid, dimethyl-, 2-hydroxy-2-propenyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

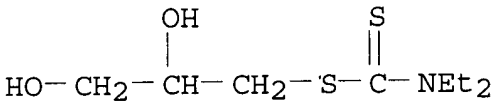
CRN 179098-55-6
CMF C6 H11 N O S2



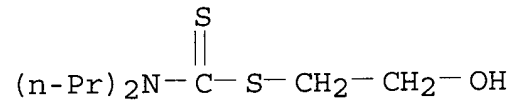
L55 ANSWER 6 OF 32 HCA COPYRIGHT 2003 ACS on STN
122:92784 Electrophotographic liquid developer with superior dispersibility, redispersibility, and fixability. Kato, Eiichi (Fuji Photo Film Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 06003869 A2 19940114 Heisei, 69 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1992-187328 19920623.
IT **27849-33-8 90886-62-7**
(initiator, for prepn. of dispersion stabilizing resin)
RN 27849-33-8 HCA
CN Carbamodithioic acid, dimethyl-, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)



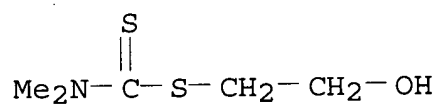
RN 90886-62-7 HCA
CN Carbamodithioic acid, diethyl-, 2,3-dihydroxypropyl ester (9CI) (CA INDEX NAME)



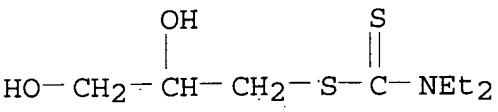
L55 ANSWER 7 OF 32 HCA COPYRIGHT 2003 ACS on STN
122:45549 A comparative study of the chromatography of hydroxylated dialkyldithiocarbamates as models for drug metabolites. Evans, M. B.; Smith, M. S. (Division of Chemical Sciences, Univ. of Hertfordshire, Hatfield, Hertfordshire, AL10 9AB, UK). Chromatographia, 39(9/10), 569-76 (English) 1994. CODEN: CHRGB7. ISSN: 0009-5893. Publisher: Vieweg.
IT **160177-05-9**
(comparative study of chromatog. of hydroxylated dialkyldithiocarbamates as models for drug metabolites)
RN 160177-05-9 HCA
CN Carbamodithioic acid, dipropyl-, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)



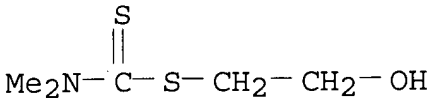
L55 ANSWER 8 OF 32 HCA COPYRIGHT 2003 ACS on STN
121:311855 electrophotographic liquid developer. Kato, Eiichi (Fuji Photo Film Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 06019219 A2 19940128 Heisei, 66 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1992-195898 19920701.
IT **27849-33-8 90886-62-7**
(polymn. initiator, for prepn. of latexes for electrophotog. liq. developers)
RN 27849-33-8 HCA
CN Carbamodithioic acid, dimethyl-, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)



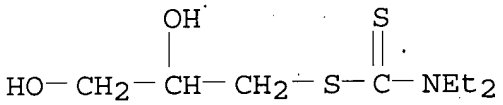
RN 90886-62-7 HCA
CN Carbamodithioic acid, diethyl-, 2,3-dihydroxypropyl ester (9CI) (CA INDEX NAME)



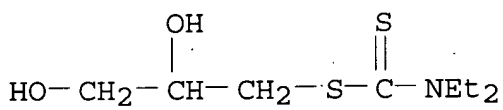
L55 ANSWER 9 OF 32 HCA COPYRIGHT 2003 ACS on STN
119:213949 Electrophotographic liquid developer. Kato, Eiichi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 04313763 A2 19921105 Heisei, 39 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1991-105158 19910411.
IT **27849-33-8 90886-62-7**
(polymn. initiator, dispersion-stabilizing resin prepn. using)
RN 27849-33-8 HCA
CN Carbamodithioic acid, dimethyl-, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)



RN 90886-62-7 HCA
CN Carbamodithioic acid, diethyl-, 2,3-dihydroxypropyl ester (9CI) (CA INDEX NAME)



L55 ANSWER 10 OF 32 HCA COPYRIGHT 2003 ACS on STN
114:82424 Preparation of glycerol dithiocarbamates and analogs as antivirals. Postel, Denis Ghislain; Ronco, Gino Lino; Villa, Pierre Joseph; Ville, Guy Andre; Plan, Robert (Institut Merieux S. A., Fr.). Fr. Demande FR 2638457 A1 19900504, 34 pp. (French). CODEN: FRXXBL. APPLICATION: FR 1988-14276 19881102.
IT **90886-62-7P**
(prepn. of, as antiviral and immunomodulator)
RN 90886-62-7 HCA
CN Carbamodithioic acid, diethyl-, 2,3-dihydroxypropyl ester (9CI) (CA INDEX NAME)



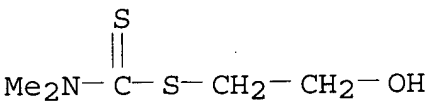
L55 ANSWER 11 OF 32 HCA COPYRIGHT 2003 ACS on STN
114:33015 Rapid processing of color photographic materials. Goto,

Masatoshi; Morimoto, Kiyoshi; Iwano, Haruhiko (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 02044355 A2 19900214 Heisei, 45 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1988-195773 19880805.

IT **27849-33-8**
(fixing accelerator, photog. bleach soln. contg., for rapid processing)

RN 27849-33-8 HCA

CN Carbamodithioic acid, dimethyl-, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)



L55 ANSWER 12 OF 32 HCA COPYRIGHT 2003 ACS on STN

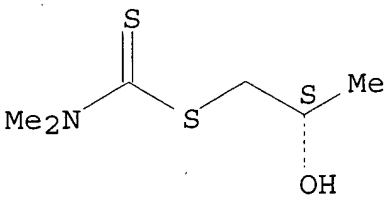
110:192212 Asymmetric reduction of .alpha.-(dimethylthiocarbamoylthio) carbonyl compounds with bakers' yeast. Tsuboi, Sadao; Kohara, Noriyuki; Utaka, Masanori; Takeda, Akira (Sch. Eng., Okayama Univ., Tsushima, 700, Japan). Bulletin of the Chemical Society of Japan, 61(9), 3205-9 (English) 1988. CODEN: BCSJA8. ISSN: 0009-2673. OTHER SOURCES: CASREACT 110:192212.

IT **120158-16-9P 120158-18-1P 120158-19-2P**
120158-20-5P 120158-21-6P 120158-23-8P
120158-24-9P 120158-26-1P
(prepn. of)

RN 120158-16-9 HCA

CN Carbamodithioic acid, dimethyl-, 2-hydroxypropyl ester, (S)- (9CI) (CA INDEX NAME)

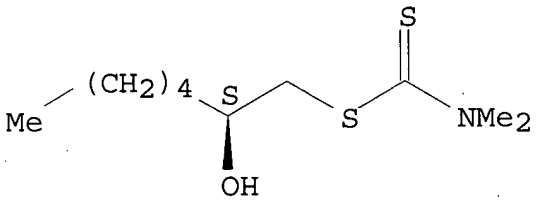
Absolute stereochemistry.



RN 120158-18-1 HCA

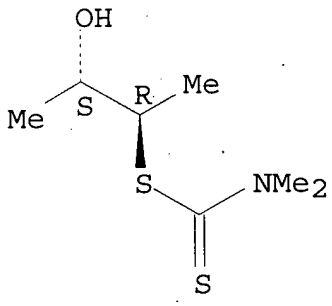
CN Carbamodithioic acid, dimethyl-, 2-hydroxyheptyl ester, (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



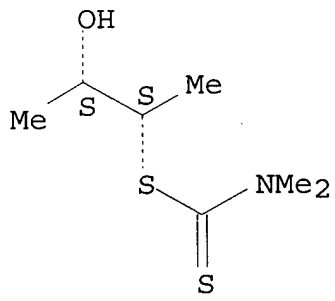
RN 120158-19-2 HCA
CN Carbamodithioic acid, dimethyl-, 2-hydroxy-1-methylpropyl ester, [R-(R*,S*)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



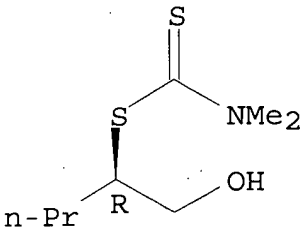
RN 120158-20-5 HCA
CN Carbamodithioic acid, dimethyl-, 2-hydroxy-1-methylpropyl ester, [S-(R*,R*)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



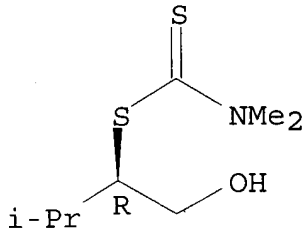
RN 120158-21-6 HCA
CN Carbamodithioic acid, dimethyl-, 1-(hydroxymethyl)butyl ester, (R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



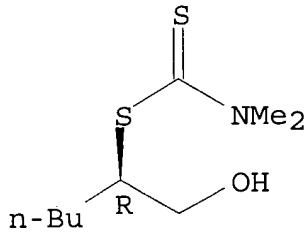
RN 120158-23-8 HCA
CN Carbamodithioic acid, dimethyl-, 1-(hydroxymethyl)-2-methylpropyl ester, (R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



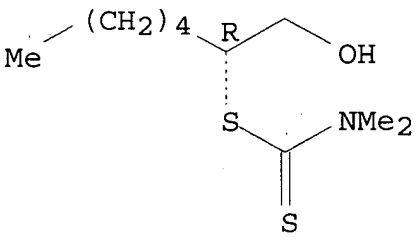
RN 120158-24-9 HCA
CN Carbamodithioic acid, dimethyl-, 1-(hydroxymethyl)pentyl ester, (R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

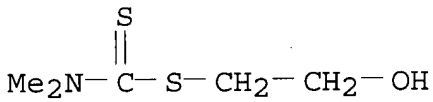


RN 120158-26-1 HCA
CN Carbamodithioic acid, dimethyl-, 1-(hydroxymethyl)hexyl ester, (R)- (9CI) (CA INDEX NAME)

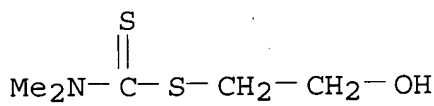
Absolute stereochemistry.



L55 ANSWER 13 OF 32 HCA COPYRIGHT 2003 ACS on STN
109:14640 Heat developing diffusion-transfer color photographic element in presence of silver halide solvents. Hirai, Hiroyuki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 62283335 A2 19871209 Showa, 33 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1986-171681 19860723. PRIORITY: JP 1986-41622 19860228.
IT **27849-33-8**
(silver halide solvent, heat developing diffusion-transfer color photog. material contg.)
RN 27849-33-8 HCA
CN Carbamodithioic acid, dimethyl-, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)



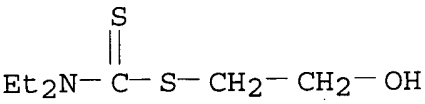
L55 ANSWER 14 OF 32 HCA COPYRIGHT 2003 ACS on STN
99:46004 Formation of a photographic image. Hirano, Shigeo; Takagi, Yoshihiro (Fuji Photo Film Co., Ltd. , Japan). Ger. Offen. DE 3203661 A1 19820916, 85 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1982-3203661 19820203. PRIORITY: JP 1981-14565 19810203; JP 1981-14566 19810203; JP 1981-14567 19810203.
IT **27849-33-8**
(lith photog. materials contg. acylhydrazine derivs. and, for high-contrast neg. images of good dot quality)
RN 27849-33-8 HCA
CN Carbamodithioic acid, dimethyl-, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)



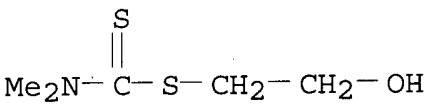
L55 ANSWER 15 OF 32 HCA COPYRIGHT 2003 ACS on STN
94:30158 Mechanism of the formation of ethylene bis(dimethyldithiocarbamate) from tetramethylthiuram monosulfide and

sodium 2-hydroxyethanethiolate. Kitson, Trevor M. (Dep. Chem. Biochem. Biophys., Massey Univ., Palmerston North, N. Z.). Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (8), 1724-5 (English) 1980. CODEN: JCPRB4. ISSN: 0300-922X.

IT **5347-18-2P**
(prepn. and NMR of)
RN 5347-18-2 HCA
CN Carbamodithioic acid, diethyl-, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)

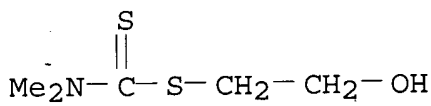


IT **27849-33-8P**
(prepn., NMR, and reaction of, with dimethyldithiocarbamate)
RN 27849-33-8 HCA
CN Carbamodithioic acid, dimethyl-, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)



L55 ANSWER 16 OF 32 HCA COPYRIGHT 2003 ACS on STN
87:67824 Synthesis and biological properties of dithiocarbamic acid derivatives. X. The fungicide effectiveness of several N,N-dimethyldithiocarbamates. Konecny, V.; Halgas, J. (Res. Inst. Agrochem. Technol., Bratislava, Czech.). Acta Facultatis Rerum Naturalium Universitatis Comenianae, Chimia, 25, 37-67 (German) 1977. CODEN: AFRCAQ. ISSN: 0524-2312.

IT **27849-33-8P**
(prepn. and fungicidal activity of)
RN 27849-33-8 HCA
CN Carbamodithioic acid, dimethyl-, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)



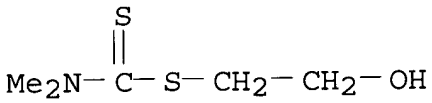
L55 ANSWER 17 OF 32 HCA COPYRIGHT 2003 ACS on STN
87:38788 Action of nucleophiles on tetramethylthiuram monosulfide. Kitson, Trevor M. (Dep. Chem. Biochem Biophys., Massey Univ., Palmerston North, N. Z.). Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (5),

565-6 (English) 1977. CODEN: JCPRB4. ISSN: 0300-922X.

IT **27849-33-8P**
(prepn. of)

RN 27849-33-8 HCA

CN Carbamodithioic acid, dimethyl-, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)



L55 ANSWER 18 OF 32 HCA COPYRIGHT 2003 ACS on STN

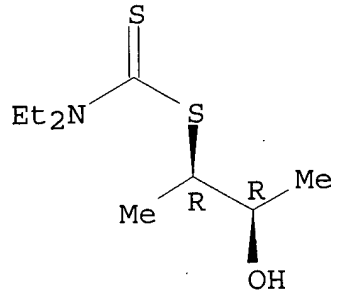
83:43226 Dithiols. Conversion of aliphatic and alicyclic epoxides into trithiocarbonates. Ali, M. Erfan; Kardouche, Nabil G.; Owen, Leonard N. (Dep. Chem., Imp. Coll., London, UK). Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (8), 748-54 (English) 1975. CODEN: JCPRB4. ISSN: 0300-922X.

IT **56155-65-8P**
(prepn. of)

RN 56155-65-8 HCA

CN Carbamodithioic acid, diethyl-, 2-hydroxy-1-methylpropyl ester, (R*,R*)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L55 ANSWER 19 OF 32 HCA COPYRIGHT 2003 ACS on STN

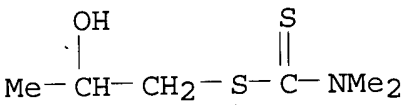
83:11903 Vulcanizing neoprene by using certain 2-hydroxyalkyl N,N-dialkyldithiocarbamates as accelerators. Beadle, Howard C. (Vanderbilt, R. T., Co., Inc.). U.S. US 3867359 19750218, 4 pp. (English). CODEN: USXXAM. APPLICATION: US 1973-416506 19731116.

IT **22410-69-1 27849-33-8 55470-70-7 55470-71-8 55470-72-9**
(vulcanization accelerators, for nonsulfur-modified neoprene rubber)

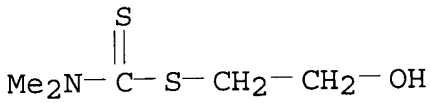
RN 22410-69-1 HCA

CN Carbamodithioic acid, dimethyl-, 2-hydroxypropyl ester (9CI) (CA

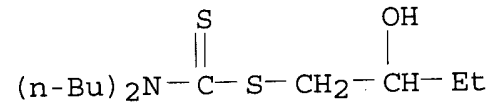
INDEX NAME)



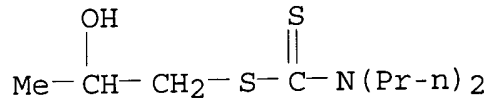
RN 27849-33-8 HCA
CN Carbamodithioic acid, dimethyl-, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)



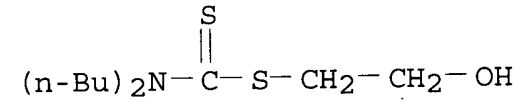
RN 55470-70-7 HCA
CN Carbamodithioic acid, dibutyl-, 2-hydroxybutyl ester (9CI) (CA INDEX NAME)



RN 55470-71-8 HCA
CN Carbamodithioic acid, dipropyl-, 2-hydroxypropyl ester (9CI) (CA INDEX NAME)

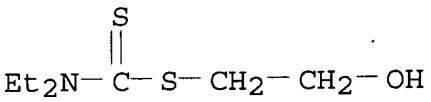


RN 55470-72-9 HCA
CN Carbamodithioic acid, dibutyl-, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)

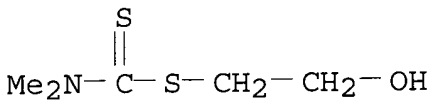


L55 ANSWER 20 OF 32 HCA COPYRIGHT 2003 ACS on STN
77:71256 Synthesis and biological properties of dithiocarbamic acid derivatives. IV. Herbicidal activity of some esters of N, N-diethyldithiocarbamic acid. Konecny, V.; Priehradny, S.; Truchlik, S.; Sutoris, V. (Res. Inst. Agrochm. Technol., Bratislava-Predmestie, Czech.). Acta Facultatis Rerum Naturalium Universitatis Comenianae, Chimia, Volume Date 1970, No. 14, 47-57 (German) 1971. CODEN: AFRCAQ. ISSN: 0524-2312.

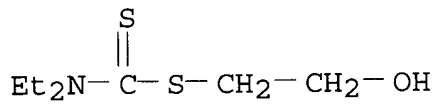
IT **5347-18-2**
(herbicides)
RN 5347-18-2 HCA
CN Carbamodithioic acid, diethyl-, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)



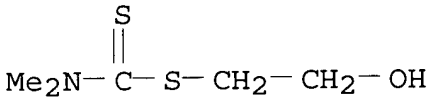
L55 ANSWER 21 OF 32 HCA COPYRIGHT 2003 ACS on STN
76:149827 Synthesis and biological properties of dithiocarbamic acid derivatives. IX. Fungicide activity of some esters of dithiocarbamic acids. Konecny, V.; Truchlik, S.; Sutoris, V. (Res. Inst. Agric.-Chem. Technol., Bratislava, Czech.). Acta Facultatis Rerum Naturalium Universitatis Comenianae, Chimia, No. 15, 61-9 (German) 1971. CODEN: AFRCAQ. ISSN: 0524-2312.
IT **27849-33-8**
(fungicides)
RN 27849-33-8 HCA
CN Carbamodithioic acid, dimethyl-, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)



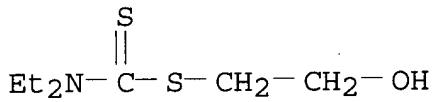
L55 ANSWER 22 OF 32 HCA COPYRIGHT 2003 ACS on STN
74:63952 Dithiocarbamates. Konecny, Vaclav Czech. CS 134162 19691115, 3 pp. (Czech). CODEN: CZXXA9. APPLICATION: CS 19680202.
IT **5347-18-2P 27849-33-8P**
(prepn. of)
RN 5347-18-2 HCA
CN Carbamodithioic acid, diethyl-, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)



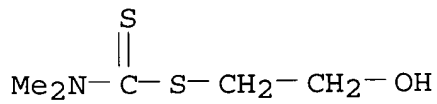
RN 27849-33-8 HCA
CN Carbamodithioic acid, dimethyl-, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)



L55 ANSWER 23 OF 32 HCA COPYRIGHT 2003 ACS on STN
73:109727 Acyl isocyanates and their derivatives. VI. Synthesis of N-acyl-O-.beta.-(halo-, xanthyl-, or dithiocarbamyl)ethylcarbamates and their conversions into N-acyloxazolidin-2-ones. Nuridzhanyan, K. A.; Bulanova, N. P.; Pivovarov, G. A. (Vses. Nauch.-Issled. Inst. Khim. Sredstv. Zashch. Rast., Moscow, USSR). Zhurnal Organicheskoi Khimii, 6(8), 1593-600 (Russian) 1970. CODEN: ZORKAE. ISSN: 0514-7492.
IT **5347-18-2P**
(prepn. of)
RN 5347-18-2 HCA
CN Carbamodithioic acid, diethyl-, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)



L55 ANSWER 24 OF 32 HCA COPYRIGHT 2003 ACS on STN
72:42181 Synthesis and biological properties of dithiocarbamic acid derivatives. I. Insecticidal, acaricidal, acaricidal-ovicidal, insecticidal-systematic, and nematicidal activity of some dimethyldithiocarbamic acid esters. Furdik, Mikulas; Konecny, V.; Saly, A.; Truchlik, S. (Komensky Univ., Bratislava, Czech.). Acta Facultatis Rerum Naturalium Universitatis Comenianae, Chimia, No. 13, 45-52 (German) 1968. CODEN: AFRCAQ. ISSN: 0524-2312.
IT **27849-33-8**
(insecticides)
RN 27849-33-8 HCA
CN Carbamodithioic acid, dimethyl-, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)



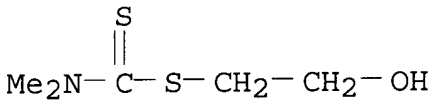
L55 ANSWER 25 OF 32 HCA COPYRIGHT 2003 ACS on STN
72:42034 Synthesis and biological properties of dithiocarbamic acid derivatives. II. Herbicidal activity of some dimethyldithiocarbamic acid esters. Furdik, Mikulas; Konecny, V.; Priehradny, S.; Truchlik, S. (Komensky Univ., Bratislava, Czech.).

Acta Facultatis Rerum Naturalium Universitatis Comenianae, Chimia, No. 13, 53-64 (German) 1968. CODEN: AFRCAQ. ISSN: 0524-2312.

IT **27849-33-8**
(herbicidal activity of)

RN 27849-33-8 HCA

CN Carbamodithioic acid, dimethyl-, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)



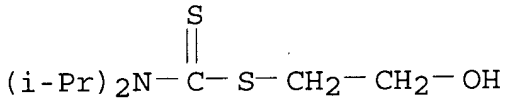
L55 ANSWER 26 OF 32 HCA COPYRIGHT 2003 ACS on STN

72:11536 Syntheses and herbicidal activities of dithiocarbamates. I. Benzyl esters of N-substituted dithiocarbamic acids and related compounds. Wakamori, Shigeki; Yoshida, Yoshio; Ishii, Yoshio (Res. Lab., Toa Agr. Chem. Co., Ltd., Odawara, Japan). Agricultural and Biological Chemistry, 33(10), 1367-76 (English) 1969. CODEN: ABCHA6. ISSN: 0002-1369.

IT **28248-92-2**
(herbicidal activity of)

RN 28248-92-2 HCA

CN Carbamic acid, diisopropyldithio-, 2-hydroxyethyl ester (8CI) (CA INDEX NAME)



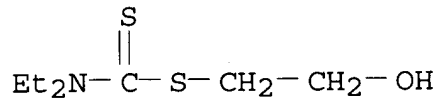
L55 ANSWER 27 OF 32 HCA COPYRIGHT 2003 ACS on STN

71:2470 Pesticidal activity of some esters of N,N'-diethyl dithiocarbamic acids. Konecny, Vaclav; Saly, Anton; Truchlik, Stefan; Furdik, Mikulas (Vysk. Ustav Agrochem. Technol., Bratislava, Czech.). Agrochemia (Bratislava), 7(1), 3-11 (Slovak) 1967. CODEN: AGROB2. ISSN: 0002-1830.

IT **5347-18-2**
(pesticidal activity of)

RN 5347-18-2 HCA

CN Carbamodithioic acid, diethyl-, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)



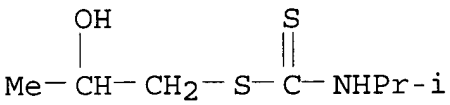
L55 ANSWER 28 OF 32 HCA COPYRIGHT 2003 ACS on STN

70:37247 2-Hydroxyalkyldithiocarbamates from epoxides and aminium dithiocarbamates. Lies, Thomas A. (American Cyanamid Co.). U.S. US 3407222 19681022, 4 pp. (English). CODEN: USXXAM. APPLICATION: US 1965-482291 19650824.

IT **22410-68-0P 22410-69-1P 22410-70-4P**
(prepn. of)

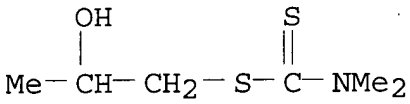
RN 22410-68-0 HCA

CN Carbamic acid, isopropyldithio-, 2-hydroxypropyl ester (8CI) (CA INDEX NAME)



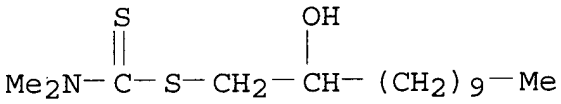
RN 22410-69-1 HCA

CN Carbamodithioic acid, dimethyl-, 2-hydroxypropyl ester (9CI) (CA INDEX NAME)



RN 22410-70-4 HCA

CN Carbamic acid, dimethyldithio-, 2-hydroxydodecyl ester (8CI) (CA INDEX NAME)



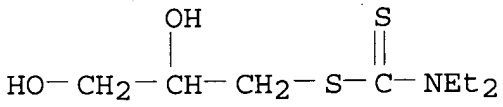
L55 ANSWER 29 OF 32 HCA COPYRIGHT 2003 ACS on STN

61:81641 Original Reference No. 61:14194b-d Additive for electrolytic refining. (DEHYDAG Deutsche Hydrierwerke G.m.b.H.). BE 635004 19631114, 17 pp. (Unavailable). PRIORITY: DE 19620720.

IT **90886-62-7**, Carbamic acid, diethyldithio-, 2,3-dihydroxypropyl ester
(metal electrolytic refining additive)

RN 90886-62-7 HCA

CN Carbamodithioic acid, diethyl-, 2,3-dihydroxypropyl ester (9CI) (CA INDEX NAME)



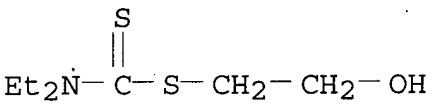
L55 ANSWER 30 OF 32 HCA COPYRIGHT 2003 ACS on STN

57:31617 Original Reference No. 57:6357d-i,6358a-b Fungitoxicity of carbamic and thiocarbamic acid esters. Rich, Saul; Horsfall, James G. Conn. Agr. Expt. Sta., New Haven, Bull., No. 639, 1-95 (Unavailable) 1961.

IT **5347-18-2**, Carbamic acid, diethyldithio-, 2-hydroxyethyl ester
(as fungicide)

RN 5347-18-2 HCA

CN Carbamodithioic acid, diethyl-, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)



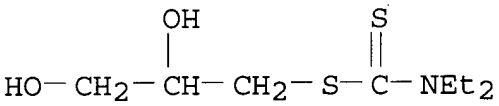
L55 ANSWER 31 OF 32 HCA COPYRIGHT 2003 ACS on STN

53:93323 Original Reference No. 53:16767i,16768a Bright plating. Gundel, Wolfgang; Strauss, Wennemar; Haas, Hermann (DEHYDAG, Deutsche Hydrierwerke G. m. b. H.). US 2892760 19590630 (Unavailable). APPLICATION: US .

IT **90886-62-7**, Carbamic acid, diethyldithio-, 2,3-dihydroxypropyl ester
(as brightening agent in electroplating)

RN 90886-62-7 HCA

CN Carbamodithioic acid, diethyl-, 2,3-dihydroxypropyl ester (9CI) (CA INDEX NAME)



L55 ANSWER 32 OF 32 HCA COPYRIGHT 2003 ACS on STN

52:117693 Original Reference No. 52:20856i,20857a-b New organic phosphorus compounds as insecticides. III. Mixed glycol esters. Szabo, K.; Matolcsy, Gy. (Research Inst. Plant Protection, Budapest). Acta Chimica Academiae Scientiarum Hungaricae, 15, 201-9 (English) 1958. CODEN: ACASA2. ISSN: 0001-5407.

IT **5347-18-2**, Carbamic acid, diethyldithio-, 2-hydroxyethyl ester
(prepn. of)

RN 5347-18-2 HCA

CN Carbamodithioic acid, diethyl-, 2-hydroxyethyl ester (9CI) (CA INDEX NAME)